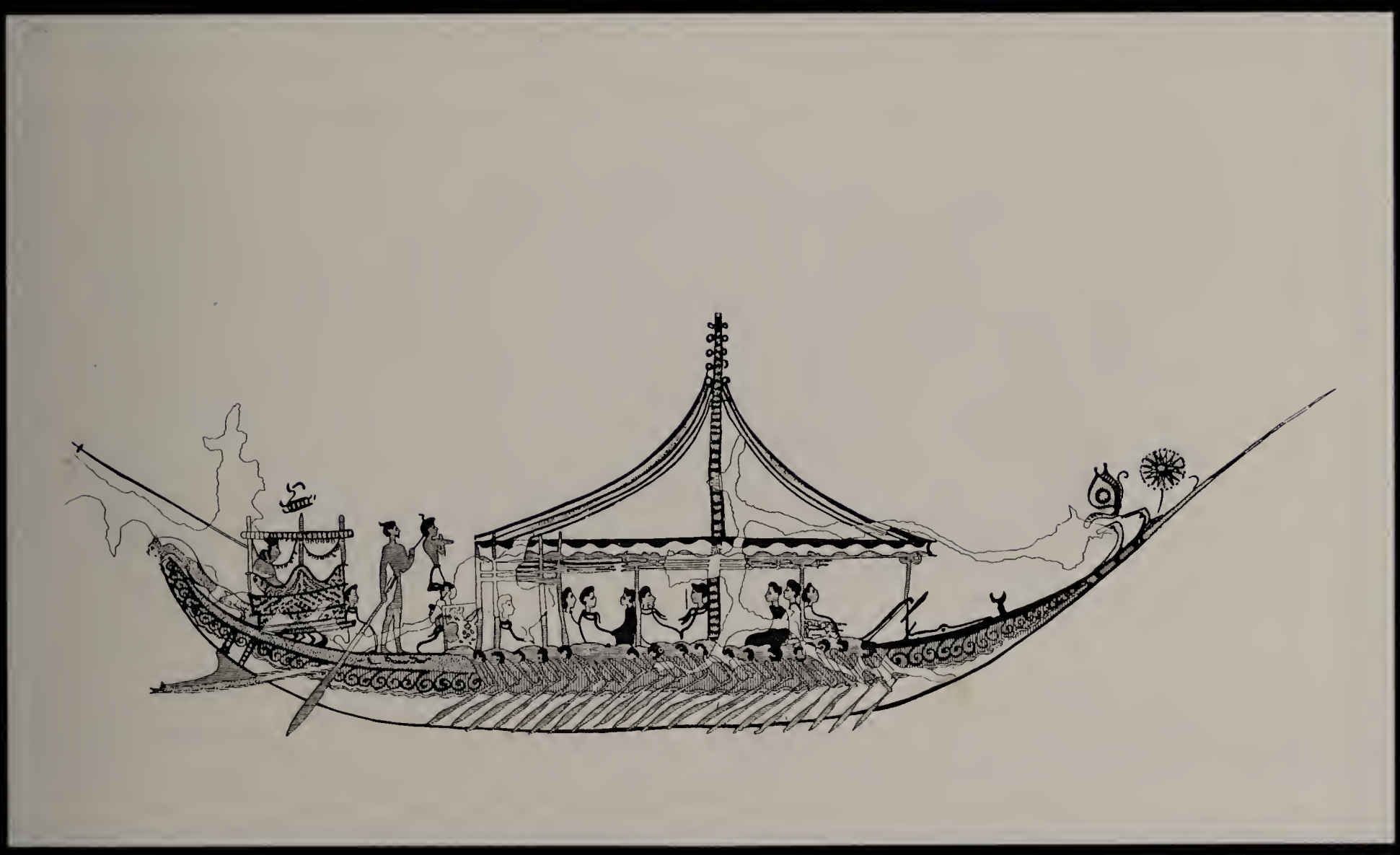
# THE AMERICAN NEPTUNE

## MARITIME HISTORY & ARTS



VOLUME 56, NUMBER 4

FALL 1996

Vol. 56, No. 4, 1996 ISSN 0003-0155

Editor-in-Chief
**Barry M. Gough**
Wilfrid Laurier University, Ontario

Book Review Editor
**Briton C. Busch**
Colgate University

Maritime Arts and News Editor
**Daniel Finamore**
Peabody Essex Museum

Managing Editor
**Geraldine M. Ayers**
Peabody Essex Museum

Copy and Proofreaders
**Eva Ritter-Walker**
**Merrily Glosband**
Peabody Essex Museum

Editorial Services
**Charles Anezis**
Peabody Essex Museum

Assistant Publisher
**Dori Phillips**
Peabody Essex Museum

Publisher
**Donald S. Marshall**
Peabody Essex Museum

Subscription Services
**Jack Bishop**
Peabody Essex Museum

Advertising Services
**Eva Ritter-Walker**
Peabody Essex Museum

Fulfillment Activities
**Donald A. Hunter**
Peabody Essex Museum

Analysis and Research
**Victor A. Lewinson**
Peabody Essex Museum

**EDITORIAL ADVISORY BOARD**

**James C. Bradford**
Texas A&M University

**Edward G. Brownlee**
Mount Holly, New Jersey

**J. Revell Carr**
Mystic Seaport Museum

**John S. Carter**
Independence Seaport Museum

**Lionel Casson**
New York University

**William M. Fowler, Jr.**
Northeastern University

**Stuart M. Frank**
Kendall Whaling Museum

**Ebenezer Gay**
Rockland, Maine

**John H. Harland**
Kelowna, BC

**John R. Herbert**
Spring Hill, Florida

**S. W. Jackman**
University of Victoria, BC

**Paul F. Johnston**
Smithsonian Institution

**Roger Knight**
National Maritime Museum

**Benjamin Labaree**
Amesbury, MA

**W. J. Lewis Parker**
Captain USCG (Ret.)

**Carla Rahn Phillips**
University of Minnesota

**Philip C. F. Smith**
Bath, Maine

**William N. Still, Jr.**
Kailua-Kona, Hawai'i

**Wilcomb E. Washburn**
Smithsonian Institution

**William D. Wilkinson**
Mariners Museum

*The American Neptune* is published winter, spring, summer, and fall by the Peabody Essex Museum, Incorporated, of Salem, Massachusetts, d/b/a Peabody Essex Museum. Officers of the corporation are: John O. Parker, President; Judith P. Eissner, Vice President, Development; Joseph D. Hinkle, Esq., Vice President; Carter H. Harrison, Vice President and Treasurer; Ronald Jackson; Assistant Treasurer; Lea B. Pendleton, Secretary; Richard Wheatland, II, Chairman of the Overseers.

Support of the journal depends upon receipts from subscriptions; no payment is made for contributions or for editorial work. Subscriptions are accepted for a one-year period and begin with the issue published following receipt of the subscriber's order.

The editors of *The American Neptune* assume editorial responsibility, but they and the Peabody Essex Museum do not necessarily endorse the opinions expressed by authors and book reviewers. "Guidelines for Contributors" to *The American Neptune*, a style sheet for manuscript preparation, will be sent to prospective contributors upon request to the managing editor.

The Peabody Essex Museum gratefully acknowledges the contribution of a grant from Wilfrid Laurier University to assist the Editor-In-Chief in the management and production of this journal.

*The American Neptune* (ISSN 0003-0155) is published quarterly at $39.00 per year for individual domestic subscribers, $45.00 for institutions; $42.00 per year for individual foreign subscribers, $48.00 for foreign institutions; $10.00 per single issue, by the Peabody Essex Museum, East India Square, Salem, Massachusetts, 01970. To subscribe, write to *The American Neptune*, Publications Department, enclosing a check or money order in US dollars and drawn on a US bank made payable to Peabody Essex Museum, or your credit card number (M/C, A/E, or VISA), expiration date, and signature. Manuscripts and editorial correspondence should be addressed to the Managing Editor. Periodical postage is paid at Salem, Massachusetts, and at additional mailing offices. POSTMASTER: Send address changes to *The American Neptune*, Publications Department, Peabody Essex Museum, East India Square, Salem, Massachusetts 01970-3783. Telephone (508) 745-1876, ext. 3172; Fax (508) 744-6776; E-mail dori_phillips@pem.org. Visit our website on the World Wide Web at http://www.pem.org/neptune.

# THE AMERICAN NEPTUNE

*A QUARTERLY JOURNAL OF MARITIME HISTORY AND ARTS*

**Volume 56, No. 4**

**Fall, 1996**

COPYRIGHT 1997 BY THE PEABODY ESSEX MUSEUM
SALEM, MASSACHUSETTS

U
1
A4

PUBLISHED BY THE PEABODY ESSEX MUSEUM
SALEM, MASSACHUSETTS

**COVER ILLUSTRATION**

***Fresco***, ca. 1628 BC

A reconstructed image of one of the seven large ships depicted on the ship fresco mural found at Akrotiri on Thera from the debris left by the volcanic destruction of c. 1628 BC. With the square sail furled, twenty-one paddlers on each side propel the vessel through calm inshore waters. Seen aft (left to right) are a seated figure (the captain?), a helmsman with steering oar, and another standing figure (navigator?). Decorations adorn bow, stern, gunwale, and cabin. Secured along the foot of the mast are long bronze-tipped lances probably used by crewmen for defense. The seated passengers appear to be dignitaries. After Spyridon Marinatos, *Thera VI* archaeological report, 1974.

PRINTED IN THE UNITED STATES OF AMERICA
ALLEN PRESS, INC., LAWRENCE, KANSAS

# Contents

EDITOR-IN-CHIEF'S NOTE 314

## ARTICLES

THE MARITIME CHARACTER OF MINOAN CIVILIZATION
by Clark G. Reynolds 315

FRANK THOMAS BULLEN, 1857–1915: WHALING AND NONFICTION MARITIME WRITING
by Alston Kennerley 353

AN EARLY ANTARCTIC LANDING: CAPTAIN COOPER'S LOG OF THE *LEVANT*, 1853
by Robert Keith Headland 371

WHERE DID THE MUTINY ON THE *BOUNTY* OCCUR?
by Raymond James Maloney 383

NEWS 389

READERS' FORUM 391

## BOOK REVIEWS

IAN FRIEL, *The Good Ship, Shipbuilding and Technology in England 1200–1520*
Frederick M. Hocker 393

RICHARD HARDING, *The Evolution of the Sailing Navy, 1509–1815*
Richard Eddy 394

ROBERT S. WEDDLE, *Changing Tides: Twilight and Dawn in the Spanish Sea, 1763–1803*
Peter C. Mancall 395

DAVID HANCOCK, *Citizens of the World: London Merchants and the Integration of the British Atlantic Comunity, 1735–1785*
Walter Minchinton 396

ROBERT L. HERBERT, *Monet on the Normandy Coast: Tourism and Painting, 1867–1886*
John R. Stilgoe 397

JAMES PRITCHARD, *Anatomy of a Naval Disaster: The 1746 French Naval Expedition to North America*
Jonathan R. Dull 398

JOHN DUNMORE, TRANSLATOR, ED., *The Journal of Jean-François de Galaup de la Pérouse, 1785–1877*
Harry Kelsey 400

DANA A. STORY, *The Shipbuilders of Essex: A Chronicle of Yankee Endeavor*
Nathan R. Lipfert 401

SHELDON S. COHEN, *Yankee Sailors in British Gaols: Prisoners of War at Forton and Mill, 1773–1783*
Paul A. Gilje 402

HAROLD D. LANGLEY, *A History of Medicine in the Early U.S. Navy*
Frederick Leiner 404

ROBERT J. SCHNELLER, JR., *A Quest for Glory: A Biography of Rear Admiral John A. Dahlgren*
Spencer C. Tucker 404

CHESTER G. HEARN, *The Capture of New Orleans, 1862*
Royce Shingleton 405

KEITH YATES, *Graf Spee's Raiders: Challenge to the Royal Navy, 1914–1915*
David French 406

MALCOLM R. MURFETT, ED., *The First Sea Lords: From Fisher to Mountbatten*
Keith Neilson 407

JAMES F. CALVERT, *Silent Running: My Years on a World War II Attack Submarine*
Carl Boyd 408

JOHN BUNKER, *Heroes in Dungarees: The Story of the American Merchant Marine in World War II*
Charles Dana Gibson 409

EDWARD L. BEACH, *Scapegoats: a Defense of Kimmel and Short at Pearl Harbor*
Robert W. Love, Jr. 411

GAYLORD T. M. KELSHALL, *The U-Boat War in the Caribbean*
David Syrett 413

## SHORTER NOTICES

DIANE FROST, ED., *Ethnic Labour and British Imperial Trade: A History of Ethnic Seafarers in the United Kingdom* 413

GENE ERIC SALECKER, *Disaster on the Mississippi: The* Sultana *Explosion, April 27, 1865* 414

LOUIS R. HARLAN, *All at Sea: Coming of Age in World War II* 414

PAUL STILLWELL, *Battleship* Missouri*: An Illustrated History* 414

JOHN A. BUTLER, *Strike Able-Peter: The Stranding and Salvage of the USS* Missouri 414

VIRGINIA STEELE WOOD AND MARY R. BULLARD, EDS., *Journal of a Visit to the Georgia Islands of St. Catherines, Green, Ossaban, Sapelo, St. Simons, Jekyll, and Cumberland, with Comments on the Florida Islands of Amelia, Talbot, and St. George, in 1753* 415

DAVID STEVENS, ED., *The Royal Australian Navy in World War II* 415

BRITON C. BUSCH

# Editor-in-Chief's Note

When did modern history begin? What are the origins of Western Civilization? We continue to seek answers to these questions. The Minoans, a pre-Greek and pre-literary society, flourished on the island of Crete and throughout the southern Aegean basin seven to twelve centuries before the being of Greece's classical era of greatness.

The maritime character of Minoan society, so little known until now, is the subject of our lead article written by the distinguished student of maritime affairs and history Clark G. Reynolds. Carefully reconstructing the history and chronology of the Minoans, their ships and seaport, their trade routes and navigation, and their religion and culture, Professor Reynolds has given a vibrant portrait of a people and economy little known and appreciated. He resurrects from the past, using wide ranging sources, the dynamics of an early seaborne society, the prototype for other Mediterranean peoples. Included with this contribution is a bibliography which will aid scholars and other readers of the future to place "The Maritime Character of Minoan Civilization" into the larger literature.

*The American Neptune* is pleased to publish articles on the subject of Ancient History, and although its focus has always been on developments of the modern era we are of opinion that other eras have much to reveal and teach about the evolution of marine affairs and therefore deserve a place in our pages.

This issue completes the present volume, our fifty-sixth. We continue to seek high quality manuscripts on topics of unique importance. We encourage fresh research, thorough documentation, and excellent literary style. We have a large backlog of good material. However, we encourage potential contributors to submit their work, though we do request that they have it in a high state of literary merit. The computer, or more correctly the word processing generation, has changed the way we work. Increasingly we prefer manuscripts that are already "on diskette," and our preferred language is Word Perfect.

*The American Neptune* depends on its subscribers. We encourage you to continue your subscription and to speak to others who do not know about our journal. In past months some technical delays in our production have put us behind schedule, though at year end, and volume end, we are now back to our original intentions. We thank our loyal subscribers for their patience.

From time to time special supplements are published for subscribers to *The American Neptune*. Accompanying Volume 56 is a special supplement, Donald Starr's account of the progress of the schooner *Pilgrim*. The watercolor of this vessel at Papeete in 1933 graces the cover of our second number of this volume. Nowadays vessels still lie stern-in to the strand of this port, though the harbor is crowded with yachts of contemporary design and most recent materials — hardly a wooden spar can be seen: all is metal. Thus, however, it was since Minoan times, even before.

BARRY GOUGH
EDITOR-IN-CHIEF

# The Maritime Character of Minoan Civilization

CLARK G. REYNOLDS

Minoan civilization flourished on the island of Crete and throughout the southern Aegean basin from about 2000 to 1500 BC. A Bronze Age (c. 3000– 1200 BC ) culture, it was distinctive as the first high European civilization and the first one West or East to have been essentially maritime in character. The Minoans were pre-Greek and pre-literary, their very existence virtually forgotten by the beginning of Classical Greece (c. 800 BC). They were not rediscovered until AD 1900 by archaeologist Arthur Evans. He named them for the legendary King Minos of Crete, who, however, has since been identified with the Mycenaeans, the earliest Greeks who eventually succeeded the Minoans. In fact, the Bronze Age Cretans were probably called Keftiu, their island Kaptaru or Caphtor; inscriptions in Eighteenth Dynasty Egyptian tombs portrayed emissaries "of Keftiu-land (and) the islands which are within the great green [sea]," the Mediterranean.[1]

Building on Evans' pioneering work, archaeologists have painstakingly revealed both the cultural sophistication of Minoan society and the broad geographical range of Minoan trade and contacts throughout the eastern Mediterranean littoral. Like historians, archaeologists have not always agreed on the meanings and interpretations of the evidence. As ever more artifacts are unearthed and new analytical techniques applied, fresh questions arise. Even the Minoan script — which Evans dubbed Linear A — has yet to be deciphered. Still in all, the Minoans seem to have achieved their greatness largely by virtue of seafaring, a fact that needs to be understood by historians of the sea and, indeed, of Western and all civilizations.

The essentially maritime character of the Minoans becomes evident when the history of their civilization is reconstructed and contrasted with other civilizations and cultures contemporary to them. This proposition is addressed herein by examining the Minoans in four separate but closely interrelated categories: 1. History and Chronology; 2. Ships and Seaports; 3. Trade Routes and Navigation; 4. Religion and Culture.

## History and Chronology

Especially confounding for historians is the basic — and constantly revised — chronological sequence of Minoan civilization, inasmuch as archaeologists are sharply divided over the timing of distinctive periods of Minoan history. Evans established historical divisions according to pottery styles, a system which has become less than satisfactory over the years but so commonly used as to defy replacement with another system. The chronology of this essay follows Evans' period designations: Early, Middle, and Late Minoan (EM, MM, LM)

Map A: Minoan Crete and the southern Aegean Sea.

I, II, and III, and the most recent chronological dating of them by archaeologist Sturt W. Manning. All dates are BC.[2] A chronological table is appended.

**Early Minoan I**, c. 3100/3000 to c. 2700/2650.[3] The high Bronze Age culture of Crete developed after four millennia of Neolithic (Stone Age) existence during which several migrations had occurred by sea, probably from western Anatolia (modern Turkey) and the Cyclades Islands (west central Aegean). As Cretans now began to leave their caves, they established their first proto urban settlements at locations more or less close to the coast (Map A). Knossos, situated 15 km (9 mi) inland of the north central shore, became a town and Phaistos near the south coast a village, so categorized by relative physical layouts and population sizes. Among a few small hamlets were Palaikastro on the east coast and the offshore island of Pseira in the northeast. Their economies were based on small scale mixed farming (cereal agriculture and pastoral) supplemented by fishing.

No evidence exists of Crete's insularity having been subjected to, or even threatened with, a concerted seaborne invasion by any other polity (political unit, state) during this period, nor over the ensuing millennium or so until the very end of Minoan greatness. Occasional raids by other Aegean islanders probably explain the few defensive walls erected during EMI, II, and III and even later. The absence of a major organized foreign power upon the sea insured general Minoan security. The only early third millennium civilization bordering the Mediterranean was Old Kingdom Egypt, whose waterborne activity was confined to the Nile River and coastal trade to the Levant/Syro-Palestinian region (modern Syria, Lebanon, and Israel) (Map B). The few Egyptian and Near Eastern artifacts found in EMI Crete (trade goods and gifts) probably arrived on Levantine ships. The basically peaceful and stable longevity of the Mino-

Map B: The eastern Mediterranean Sea in the Bronze Age.

ans made possible by their geographical insularity helps explain their evolving distinctive character and overall self confidence.[4]

**Early Minoan II**, c. 2650 to c. 2200/2150.[5] The choice areas of arable land on Crete filled up as olive and grape cultivation expanded Cretan agriculture. This led to surplus labor concentrated at population centers and probably under an emergent elite of managers. A simultaneous "international spirit" of peoples from the Near East to the Aegean[6] seems to have acted as a stimulus to Minoan growth with Crete's location as a new crossroad of maritime traffic. The islanders of the southern Aegean Cyclades and coastal peoples of western Anatolia increased existing contacts with one another for trade that extended as far south as Crete, but with the Minoans now initiating their own over-water activities. Such commerce was probably only sporadic and between governing elites: Minoan imports of raw materials (obsidian and copper) and handcrafted stone figurines, in return for some pottery but mostly organic goods, olive oil, wine, honey, and spices, the only raw commodities which mineral-poor Crete had to offer.[7] The one apparent Minoan overseas colonial venture of this period seems to have been the establishment of a settlement, initially only seasonal, on Kythera, the island closest to the peoples of mainland Greece.

In the East, Syro-Palestinian coastal kingdoms such as Byblos and Ugarit exploited new Mesopotamian and Egyptian trade routes and already established connections with the Minoans. Some scholars argue that this Levantine influence was the catalyst which propelled the Minoans into becoming a high civilization as opposed to other island peoples too small ever to mature into major polities.[8] For example, newly erected two-story stone columned and walled Minoan buildings showed Syrian and Egyptian influences, as did techniques of crafting pottery, fine stones, gold, and silver, but usually in a

fundamentally unique Minoan style.

The importation of Eastern goods probably caused the founding of new hamlets with local workshops for crafting the imported metals and situated near both ends of the narrow 12 km (7 mi) long north-south Isthmus of Hierapetra: on the north coast Malia, Gournia, Vasiliki, and the islet Mochlos, on the south coast smaller Myrtos (Fournou Korifi) and Pyrgos. Other settlements arose at Kommos on the southern shore near Phaistos and at Kydonia (Chania) on the far northwest coast. Most of these newer settlements were, however, destroyed and abandoned by causes unknown (earthquake and/or seaborne raiders?) toward the end of the period, probably not coincidentally with simultaneous stresses and invasions that racked Egypt, Mesopotamia, the Levant, Anatolia, and several Cyclades islands.

**Early Minoan III**, c. 2200/2150 to c. 2050/2000.[9] A time of stagnancy, this period seems to have begun at different times and at different places throughout Crete and ended similarly as final recovery occurred at each settlement. The cause seems to have been continuous seaborne raids by foreign plunderers which did not end until about the time stability returned to the Near East. EMIII may be characterized as an intermediate period, the term applied to Egypt's contemporaneous first such time of troubles (c.2180–c.2040) between its Old Kingdom and Middle Kingdom. Minoan cultural continuity was preserved mainly at urbanizing Knossos and Phaistos, both perhaps sufficiently large, well managed, and better defended to resist or deter raiders and to absorb refugees. Knossos especially grew in wealth and prestige as plough technology and the use of draft animals (oxen, donkeys) created surpluses in cereals and the desire for systematic trade abroad. As Malia, Gournia, and Vasiliki were reoccupied, their inhabitants appear to have erected fortifications as a safety measure. With the restoration of each center to cultural and economic vitality, the Minoans entered their next period (MMIA).

**Middle Minoan IA**, c. 2050/2000 to c. 1925/1900.[10] Minoan civilization took off as an urbanized culture, the basic definition of civilization. Perhaps the refugees and a fresh wave of overseas immigrants largely accounted for the population boom of this century. This growth, the need for concerted defensive measures, and a growing diversity of craft skills, including improved ships, led to a complex economy under ever more centralized management. The urban elite in turn exploited Crete's unique geographical position to promote Minoan exports of agricultural and now also high quality manufactured products: textiles, pottery, and stone vases. A revitalized Near Eastern trading network embraced the Minoans, increasing their international contacts to an unprecedented scale.

What made Minoan society decidedly urban was the transformation of Knossos into the first palatial complex during the course of the twentieth century, along with accelerated expansion of Phaistos and Malia toward that end. The Minoan palace comprised two- or three-story buildings flanked by large open courts, outlying buildings, and an adjacent town; roads gave it ready access to the seacoast and the interior. Because of the distinctive religious character of each palace's activities, the form of government was in all likelihood theocratic, a combination of political, religious, and economic administration. As an urban complex, the Minoan palace has been characterized by archaeologist L. Vance Watrous as "the residence of a powerful authority, assisted by a literate bureaucracy, which controls a system of redistribution."[11]

The notion of a monarchy as in pharaonic Egypt or the Mesopotamian city-state kingdoms seems not to have fit Minoan government. No great personages were depicted in Minoan art, nor large tombs erected to individuals, male or female. Luxury grave goods and later frescoes attest, however, to men and women important in whatever hierarchy existed. Women, indeed, seem to have enjoyed privileged status in religion and at the palaces, though not as queens. Minoan population centers apparently swelled according to economic convenience and advantages. The palaces and towns directed agricultural production in nearby countrysides and villages and maintained workshops for manufactured goods (tools, pottery, luxury items, reli-

gious paraphernalia) needed for local activities and overseas exchange. Instead of one unified nation, or even several autonomous states within Crete which competed and fought, the unity of Minoan civilization throughout its history may be defined as a relatively nonviolent cooperative island race with a shared geography, culture, religion, and economy. Military activity played a minor role, aside from sword and dagger production, and much of that was for trade.[12]

Types of Minoan overseas trade, and of Mediterranean exchanges in general, have had to be inferred by archaeologists, aided by recent methodological techniques, including modeling. Four general categories of this trade have been posited for the length of Minoan history. The dominant mode seems to have been "directional commercial," politically centralized and regularized trade between specific Minoan palatial centers and foreign population centers abroad, including the exchange of some luxury gifts between ruling elites. "Freelance commercial" traffic by independent or semi-independent shippers has been argued, along with the likelihood of "tramp" vessels with multinational crews which transshipped goods from port to port exploiting economic opportunities. Lastly, "diplomatic" voyages were undertaken between Mediterranean states to cement trade relations and usually carrying gift items. Key ports of entry acted as gateway communities, as Katsambas and, later, Amnisos did for the palace of Knossos and possibly independent towns like Mochlos in the northeast and Kydonia in the northwest.[13]

Beginning on a large scale during MMIA, Minoan craftsmen worked imported raw materials (copper and tin for making bronze; gold, silver, gemstones) into exquisite crafted objects for export on Minoan ships. Instead of relying on intermediary foreign merchantmen as in the past, Minoan seafarers plied the Aegean, probably reached the Levant, and visited Middle Kingdom Egypt, a period of high art as well as overseas trade, especially under Pharaoh Amenemhet II. They brought back not only Nilotic goods but ideas and techniques in architecture, funerary practices, hieroglyphics, and ownership seals which clearly influenced Minoan usage of them. Instead of outright adoption or copying of foreign practices and objects, the Minoans borrowed what they admired in order to improve upon them for home consumption and for marketing abroad.

**Middle Minoan IB**, c. 1925/1900 to c. 1900/1875, and **MMII**, c. 1900/1875 to c. 1750/1720.[14] The truly palatial character of Minoan civilization was achieved during these periods of two distinctive pottery styles. No qualitative change occurred from MMIA, rather a quantitative one: the erection of the complete palaces at Knossos, Phaistos, Malia, and also possibly Zakros on the east coast. Archaeologists have variously labeled this change as marking the start of the Protopalatial, Old, or First Palace period of Minoan history, thus preceded by the EM and MMIA Prepalatial period.

The established distinctive Minoan attributes of industry, efficiency, and formality took wing on a grand scale with more and improved metallurgical techniques, tools, stonework using the tubular drill, and ceramics with the potter's wheel, notably the delicate eggshell-thin Kamares ware drinking vessels. Much prized Minoan products and possibly even artisans found their way across politically tranquil seas to Egypt, the Levant, and Syria as far inland as Mari on the Euphrates River. Minoan prosperity and population swelled from improved diet, a higher standard of living, and more imported goods. The southern port town of Kommos, abandoned for three centuries, was resettled, no doubt to serve the overseas needs of the palace of Phaistos.[15] The Minoans began to establish a regularized trade network through the Cyclades Islands to Aegina and the mainland of Greece and via the southern Dodecanese islands to Cyprus and the Levant.

Then disaster struck. In what appears to have been one or more massive earthquakes, perhaps around 1780, all the palaces and towns were destroyed, or, at least in the case of Knossos, sufficiently damaged to inspire architects to create a new improved structure. The likely scenario is that the tremors toppled the buildings, overturning olive oil lamps and cooking fires which spread the conflagrations via struc-

tural timbers and other inflammables. No evidence exists of foreign invaders or post disaster intruders, and no seaborne aggressor state is known to have been active at the time, although continental Mesopotamia was overrun as far as the Euphrates by Hammurabi of Babylon.[16]

**Middle Minoan III**, c. 1750/1700 to c. 1700/1680.[17] The people of Crete rebounded from the calamity with typical vigor, constructing new, larger, and even more grandiose palaces on the ruins of the originals. Archaeologists therefore denote this era as the onset of the Neopalatial, New, or Second Palace period. Minoan civilization now achieved the height of its brilliance and power — a golden age, as it were. The ensuing material recovery and overseas economic offensive surely required an even greater degree of centralized administration, in all probability with Knossos as the agency of such leadership. The result was a cultural Minoan *Koine* throughout the Aegean world.[18]

"Cultural uniformity" are the words archaeologist Gerald Cadogan uses to describe changes in crafted products and certain religious and economic practices but without sacrificing the quality of Minoan art, goods, and life style, to which was now added the highly prized purple dye from murex shells. Minoan art enjoyed its most creative period, notably with opulent fresco wall murals at Knossos depicting scenes of nature and palace activities, both linked to religion and perhaps inspired by Egyptian fresco styles. The extent of actual Knossian political and economic control and/or direction is problematic, however. The Linear A written and numerical script appeared at the palaces, a major improvement over a cruder hieroglyphic form for administering the production and distribution of trade goods. All Cretan roads and intracoastal sea routes may now have led ultimately to Knossos from the other population centers, each conceivably administered by a type of provincial governor. An additional feature was the erection of countryside villas, opulent estate complexes clearly controlling agricultural production.[19]

The part of the new Minoan trade offensive into the Aegean may have taken a form of maritime empire: overseas economic enclaves, alliances, and/or colonies. The island of Kythera off the southern Greek mainland was already a colony. Now likely becoming colonies were existing Minoan settlements on the southern Dodecanese islands of Kasos, Karpathos, Saros, and Rhodes, stepping stones to mainland Anatolia and Cyprus, which began to blossom with new port towns. The key trade link, however, was through the Cyclades to the mineral rich mines of Laurion on mainland Attica. Most of these islands featured a strong Minoan cultural and religious presence along with the economic one. Although direct overseas political control remains a matter of conjecture, the impact of the far flung Minoan activity was sufficient to imply general Minoan hegemony (leadership) and a Minoanization of life throughout much of the southern Aegean.[20] Because no other people or power existed to challenge Cretan maritime entrepreneurs, the eighteenth century may well be regarded as the onset of a *Pax Minoica* in the region: general peace dominated by the Knossian led Minoans, whose trade to the East also continued unabated.

**Late Minoan IA**, c. 1675/1650 to c. 1600/1575.[21] The dynamic culture and general prosperity of the Minoans remained constant but no longer in a relatively tranquil maritime environment. Among migrating Indo-European warrior peoples which had been penetrating continental regions, and bringing the horse drawn war chariot with them, several now reached the Aegean and eastern Mediterranean coasts. One such people, whom archaeologists call the Mycenaeans (but perhaps the Achaeans of ancient Greek lore), established themselves in the southern Greek mainland and began erecting monumental royal shaft graves for their leaders. Of the others, which plunged Levantine Syro-Palestine into frontier wars, none was more determined than the Hyksos. At mid-century they brought down an already weakened Egypt (in its Second Intermediate Period) to establish their own pharaonic dynasty in the Nile Delta. Apparently, Hyksos hegemony was extended northward over the port cities of the Levant, notably Ugarit, which however retained their generally independent economic activities.[22]

The presence of warrior based polities in virtually all directions from Crete (except the more primitive central Mediterranean peoples) seems to have worked to Minoan advantage. These new ruling elites not only sought and obtained the Minoans' exquisite manufactured luxury goods, practical trade items, and foodstuffs, but they came under the influence of high Cretan culture. Throughout this century, if not earlier, and the next, Minoan artists journeyed abroad to paint palatial style wall and floor frescoes of Minoan subjects, including bull leaping scenes, the fabled labyrinth, and ships at sea, at the north Syrian palace of Alalakh, merchants' houses at Cycladic Thera, buildings at Canaanite Tel Kabri, and the Egyptian palace at Avaris, capital of the Hyksos. The flourishing Cretan-Egyptian trade increased to perhaps its greatest volume, including the export of Minoan medicinal plants and practices, *agrimi* goat horns for composite bows, and patterned textiles. Egyptian stone vessels and pottery storage amphoras entered Crete, where they were imitated. The possibility even exists that the Minoans built their own religious shrines wherever their traders and artisans went, also that a Minoan woman of high status may have become queen of a Hyksos pharaoh.[23]

Given the appearance of aggressive continental political regimes on foreign shores, Minoan leaders and shippers no doubt had to give increased attention to defending their seaborne trade. Thucydides began his history of the Peloponnesian War over a millennium later with a dim recollection of King Minos' thalassocracy, control of these same waters with a formidable Cretan navy. Minos, however, was probably not a seventeenth century Minoan monarch but perhaps a Mycenaean king of the fourteenth century who employed a fleet of warships to suppress Aegean piracy. Seaborne raiders, attacking coastal settlements and ships of trade, had plagued Aegean and eastern Mediterranean waters for centuries, and Bronze Age crews carried daggers and lances for protection. No formal navies or multiship fleets of specialized warships seem to have existed anywhere until after the demise of the first maritime oriented state — the Minoans.[24]

So, was Minoan civilization a thalassocracy? Did it develop a navy of warships to protect its shipping and coastlines? In the busy waters of the Levant, Minoan vessels probably shared the generally secure sailing environment dominated by the thriving merchant marines of Syro-Palestinian Ugarit and Byblos. In the Aegean, with its diverse, multitudinous, and competing island and coastal peoples, however, the danger was probably greater. By the beginning of the seventeenth century, if not earlier, the Minoan trading network through the Cyclades appears to have become formalized around three key Minoanized islands: Kea, closest to the Attican peninsula; Melos in the center; and especially Thera (Santorini), the Minoans' apparently advanced base or entrepot lying 100 km (60 mi) north of Crete.

Whether these were independent polities and Minoan allies or outright Minoan colonies or simply trading stations is not known. At least Kea and Melos constructed defensive fortifications, while they and Thera operated their own merchant vessels and adopted Minoan cultural traits. To ward off pirates and raiders, one may infer, Minoan ships, either by themselves or more likely in concert with Kean, Melian, and Theran craft, carried out amphibious raids against pirate lairs and/or, conceivably, against each other. Although these expeditions were probably accomplished by armed men on board merchant ships rather than by warships, such missions were clearly naval, therefore thalassocratic.[25]

The Minoans consequently seem to have dominated and even controlled regularized trade throughout the Aegean from the middle or late eighteenth century until the end of their civilization some 250 years later (MMIII through LMIB). Such centralized politico-economic power with some form of naval protection would clearly qualify the Minoan polity as a thalassocracy. Though not an empire in the later classical Athenian sense, it probably deserves distinction as a proto-maritime empire if for no other reason than that no rival polity or coalition of polities existed to challenge its economic supremacy. Some archaeologists have disputed the whole notion of such thalassocracy for any people of the Bronze Age (Syro-Canaanite,

Egyptian, Minoan, or Mycenaean) on the grounds of the complexities and diverse types of trade. None of these peoples appears to deserve the distinction except the Minoans. Minoan economic hegemony does not seem to have extended to the Levant or Egypt, although Minoan ships did trade heavily in those waters. In the Aegean, the Minoans were likely maritime masters.[26]

Early in LMIA, however, calamity struck again. The long dormant volcano beneath the island of Thera erupted. The date favored by most archaeologists and vulcanists is around 1628 — one or more eruptions then, and one also possibly before that time, about 1645. The final seismic blast obliterated most of Thera and buried its port town of Akrotiri. Although the fall of volcanic ash (tephra and pumice), as well as possible tidal waves (tsunamis), seem not to have seriously affected the island of Crete itself, the loss of Thera might well have shaken Minoan hegemony and its Aegean trade network. About this time, the port on the island of Kea (Ayia Irini) was leveled by an earthquake, that on Melos (Phylakopi) partially destroyed, possibly by seismic forces but more likely by human agency. New defensive walls were erected at Melos, probably to thwart increased raids. Minoan prosperity continued, but the threat to Cretan security became more serious from the blossoming of the aggressive Mycenaean peoples.[27]

**Late Minoan IB**, c. 1600/1575 to c. 1490/1470.[28] By the beginning of the sixteenth century, the new Greek warrior mainlanders were beginning to erect palaces, some fortified, at their settlements of Mycenae, Tiryns, Pylos, and Thebes. Whenever they first appeared at Knossos, probably as emissaries to cement trade relations, the Mycenaeans probably arrived in some force, not simply with well armed soldiers but introducing to Crete the horse and war chariot as well. Significantly, they came by sea, most likely in their own ships. Classicist Robert Drews has argued that the original migrations of these Indo-Europeans to Greece, with their horses, may well have been by sea, from the Black Sea coast of Pontus. Such familiarity with the sea would explain their early visits not only to Crete but to Hyksos Egypt as well.[29]

Minoan-Mycenaean commercial intercourse grew throughout the century. The mainlanders required the copper and tin necessary for forging bronze weapons and ornaments and for working silver as well, all available from their own Laurion mines of Attica and from eastern sources but these obtained under probable Minoan trade controls through Kea, closest major Cycladic island to the mainland. From their first contacts, Mycenaean rulers had desired finely worked gold jewelry and other objects for their royal tombs. Minoan ships brought such goods, including their own goldsmiths, probably to Kea for transshipment to Mycenaean centers in Kean, Aeginetan, or even Mycenaean bottoms. In return, the Mycenaeans traded pottery and minerals to the Minoans. So impressed were the Mycenaeans with the dynamic Minoan culture that they adopted Cretan fashions, art, and much of the religion. The growing Mycenaean market might have been the catalyst for the expansion of Minoan Kydonia, port town in northwest Crete closest to the mainland.[30]

Although the Minoan Cycladic trade networks had likely been weakened by the volcanic destruction of Thera, fortifications were erected on Melos, perhaps to augment those on Kea. During this period, an earthquake apparently leveled Kea's defenses. Some attacking force, probably Mycenaean, may have captured Melos. The loss of this string of island bases may have been the reason that the Minoans now abandoned their old island colony on Kythera, outflanked by its location off the south coast of Mycenaean Greece.[31]

Growing Mycenaean power in the Aegean may have stimulated the Minoans to cast about for trade alternatives in other directions. They now embarked on a major commercial offensive to the east and south. Apparently under the centralized direction of Knossos, the Minoans built or upgraded port and manufacturing facilities along Crete's northeast coast (Amnisos, Nirou Khani, Gournia), erected a new palace at Zakros on the east coast, enlarged the eastern port town of Palaikastro, built an important palatial style center at Ayia Triada adjacent to Phaistos in the south, and constructed an im-

mense commercial structure on the beach at Kommos, port of Phaistos. They also established a colony on Rhodes. Minoan merchantmen sailed thence to Anatolia, Cyprus, Syro-Palestine, Egypt, and possibly even Libya. They carried Cretan products desired by many foreign customers and returned with essentials like their first Cypriot copper. That they influenced peoples of these regions with their commercial practices is revealed, for example, by the Cypriots developing their own new script borrowed from Minoan Linear A.[32]

Mycenaean competition may have extended eastward too, further alarming the Minoans, the mainlanders trading not only with the Egyptian Hyksos but possibly with other chariot borne peoples like themselves but which invaded Syro-Palestine at mid-century. These included the Mitanni, Hurrians, and Hittites, the latter destroying the palace of Alalakh with its Minoan frescoes.

Dramatic events within Egypt transformed the international arena, no doubt affecting the maritime Minoans. The long restive descendants of the Middle Kingdom rulers, isolated in the south of Egypt, pushed north to expel the Hyksos from Avaris and the Nile Delta about 1540 and drove them all the way to Palestine. Fully alert to the need for military security, a succession of Eighteenth Dynasty pharaohs transported the Egyptian army on the vessels of their Nile weaned navy and merchant ships up the Levantine coast to stop the aggressive Mitanni. These movements liberated the coastal cities from Hyksos control, enabling Canaanite and Syrian ships to serve the New Kingdom Egyptians as independent cargo carriers. The Egyptian imperial offensive culminated with the victory of Thutmosis I's army over the Mitanni and their local puppet princes at the Euphrates River about 1506.[33]

Minoan ships, a major presence in Eastern maritime commerce, surely played some role in these momentous events. Minoan traders seem to have remained at Avaris after the Hyksos expulsion, trading with the Eighteenth Dynasty regime and even painting more frescos there. Keftiu ships were built and repaired at the royal New Kingdom dockyard near Memphis, the vessels either owned by Minoans or of a common superior Cretan design by which such merchantmen were known. The Keftiu language was known and being taught in Egypt by the 1520s. The accession of Queen Hatshepsut to the throne of Egypt soon after 1500, followed by Thutmosis III no later than 1460, heightened the Minoan trade connection. Keftiu emissaries bearing distinctively Minoan gifts and commercial goods during at least three trade missions (though one perhaps was Mycenaean) to the Delta were depicted in tomb murals of six major Egyptian officials of the two monarchs. Minoan ships may even have provided maritime support for Thutmosis III's initial campaigns against the Mitanni and their allies in Syria.[34]

Perhaps, according to one suggestion, the Minoan leadership was seeking military aid from powerful Egypt against Mycenae.[35] The Minoans certainly appear to have had no standing army by which to repel a major seaborne assault, a shortcoming typical of maritime states in the historical record. An army could only be provided by allies which had them; witness classical Athens courting alliances with Argos, Megara, and Thessaly to counter the army of Sparta. If the Minoans tried this with Egypt, it was too late, for the golden age of Minoan civilization now came to a fairly abrupt end.

**Late Minoan II**, c. 1490/1470 to c. 1435/1405.[36] The exact causes and dates of the Minoan demise are unknown. The two major possibilities are internal chaos caused by an attempted takeover of all Crete by the rulers of Knossos, or an outright invasion by the warrior Mycenaeans of mainland Greece. Or perhaps some combination of such events occurred.

Internal socioeconomic stresses may have caused the Knossian leaders to attempt a forced consolidation of their political control over the entire island. Already in LMIB, Knossian produced material goods seem to have enjoyed a near monopoly, eclipsing those of Phaistos and Malia, which may have become subservient to Knossos. Ayia Triada, maybe under Knossian rule, seems to have supplanted the dominance by Phaistos over the Mesara region in the south. Perhaps intra-island warfare erupted during the early fifteenth century. The palaces of Phaistos,

Figure 1. The roadstead of Amnisos in the seventeenth century BC. (LMIA) became the second port (after Katsambas) serving Knossos on the north shore of Crete. It was flanked by the rocky promontories in the foreground and in the distance. Minoan vessels were pulled up on the sandy beach, behind which lay a well-appointed two-story villa and other structures, directly opposite the rocky outcrop in the center of the harbor. Photo by the author.

Malia, and Zakros and all major towns, ports, and country villas were burned down, after which an unscathed Knossos dominated all of Crete. Shortly thereafter, the major Cycladic island settlements suffered similar conflagrations.[37]

A Mycenaean invasion and takeover of Crete and the Cyclades was equally possible. After a century of learning seafaring from the Minoans and other Aegeans, the mainlanders may have sealifted an army to Crete for one or more landings. As word spread, refugees would have fled to Knossos. Kommos on the south coast, for example, was apparently abandoned, leaving Phaistos and the Mesara plain open to Mycenaean war chariots. The fact that Knossos was spared could have been due to an existing Knossian-Mycenaean accommodation: by treaty, marriage, and/or a Mycenaean controlled puppet regime. And as the other Cretan centers succumbed, overseas Minoan colonies and trading emporia would have been left exposed to the invader.[38]

Whether Knossian or Mycenaean conquered, LMII Crete underwent dramatic change. The palace of Knossos was altered, initiating what has been called the Third Palace period. Military motifs appeared in artwork, a military garrison was posted, and warrior graves introduced. Minoan religious and social conventions continued, along with the production of high quality crafts and weapons. The new and apparently more efficient Mycenaean Linear B script, maybe even invented at this time on Crete, began to replace Linear A. On the east coast, the destroyed palace complex at Zakros and possibly the port town of

Figure 2A. The site of Kommos, major Minoan seaport on the south coast of Crete, seen in the clearing above the trees at the start of archaeological excavations in the 1970s. The long beach faces due west and the Bay of Mesara, the coastline running north then curving west where coastal mountains meet the shore. A Minoan town was situated on the hill above the port's commercial and administrative buildings. Courtesy of Joseph W. Shaw, director of the Kommos excavations.

Palaikastro were rebuilt, probably by whoever ruled at Knossos. In the west, Kydonia was made into a major port. The recovery lasted perhaps a half century, at the end of which time both Knossos and Zakros were put to the torch — perhaps by the Mycenaean invasion now instead of earlier.[39]

**Late Minoan III**, c. 1435/1405 to c. 1200/1190.[40] Although this was the age of the Mycenaean Empire and the Postpalatial period, the Mycenaean conquerors of Crete had already been heavily Minoanized, much as the later Romans were Hellenized by Classical Greek culture. Highly centralized and militaristic, the fortified mainland Mycenaean city-states now achieved political maturity. Their elite drew upon conquered Minoan artists and craftsmen to produce luxury goods and paint frescoes, although over time artistic quality gradually declined as the Mycenaeans shed the finer Minoan aspects of their culture. As archaeologist Oliver Dickinson puts it, Mycenaean products were "technically excellent but stereotyped."[41] The conquerors reoccupied and rebuilt parts of Knossos but no other former Minoan palaces, and recovery throughout Crete was slow and sporadic.

Mycenae's empire was primarily continental (the mainland of Greece) but also maritime and thalassocratic in the sense that the Mycenaeans filled the political, economic, and naval vacuum left by the Minoan collapse. Probably lacking sufficient military and commercial manpower to impose direct overseas autocratic rule or provide large numbers of colonists, they likely concentrated such resources at critically important

Figure 2B. The beach at Kommos, commercial emporium where Minoan and later Mycenaean vessels based and wintered and through which trade goods passed to and from Egypt and the Levant during the Bronze Age. The Mesara plain behind the site provided easy access to the palace complex of Phaistos and later Ayia Triada and via a cross-island road to Knossos near the north coast. Courtesy of Joseph W. Shaw.

places closest to home, the Cyclades and west central Crete between Kydonia, Knossos, and Kommos. They may even have left eastern Crete alone. Pockets of irreconciled Cretans survived in mountain strongholds there for centuries, while Palaikastro and southern Dodecanese Kasos, Karpathos, and Saros seem to have enjoyed virtual independence. The Minoan cultural and material milieu predominated in these islands to the end of the period. A Minoan colony may even have been founded on Cyprus in the thirteenth century. Otherwise, loosely governed and garrisoned Mycenaean trading enclaves seem to have sufficed in faraway western Anatolia, the northern Dodecanese, and Cyprus.[42] Though Mycenaean goods reached Syro-Palestine and Egypt, the Canaanite ships of Ugarit apparently dominated Aegean trade with the East, a possible reason for Mycenaean trading ships turning westward to Sicily, Italy, and Sardinia during the thirteenth century.

The Mycenaean Empire faced many more strategic threats than the Minoans ever had. Their ground forces and warships battled pirates, rival cities, and continuous pressure by warrior societies at the frontiers of their empire. By 1300 Crete may well have become a formidable province or semi-independent kingdom under a ruling *minos*(a title rather than name) whose army and navy seem to have subdued pirates and founded new colonies in the Aegean. About 1250, the Hittites defeated Troy and its allied northeastern Aegean cities, and they captured Cyprus. One generation later, a sealifted Mycenaean expeditionary force besieged and defeated Troy in the Trojan War of Homeric epic. Soon after, however, European peoples migrating by land and sea attacked and, probably assisted by a devas-

Figure 2C. The foundation remains seen here of an immense roofed Mycenaean ship shed at Kommos (the largest known building of the Late Minoan III period) included six galleries for ship storage during winter. Enclosed by the north-south back wall some 38 meters (127 feet) long, the galleries of the 4m (13 ft) high square building were open ended, facing on to an open court and the beach. The entire structure was destroyed by fire, probably caused by invaders, about 1200 BC. Courtesy of Joseph W. Shaw.

tating earthquake, destroyed the Mycenaean cities and overran Greece. Aegean refugees fled east and south into Syro-Palestine and against Egypt, whose chroniclers labeled them collectively as "the Peoples of the Sea." One group, the Philistines from Caphtor (Crete), settled in Palestine where they established new port cities; eventually absorbed into the indigenous culture, they evolved into the maritime society of the Phoenicians.

Left behind amongst the ruins of the Minoan and Mycenaean palaces and towns were scattered survivors and their uncivilized conquerors who plunged Greece, Crete, and the Aegean basin into an uncultured dark age. The conquered folk kept alive and shared with the newcomers certain practices, memories, and beliefs of both Bronze Age cultures, ingredients which played a part in the rise of Classical Greece.

## Ships and Seaports

Advances in ship design and seaport development may well have been key factors in the take off of Minoan civilization during the course of the twentieth century (MMIA). Over preceding centuries, Aegean and Mediterranean seamen had paddled and rowed dugouts and timber planked boats to fish, trade, explore, and migrate. Some Egyptian vessels

Figure 2D. A section of the rear (east) wall of the Mycenaean (LMIIIA) Kommos ship shed building (designated Building P by the archaeologists) reveals it to have been built upon the remains of an even larger, possibly two-storey, palatial-style structure (Building T) of the peak Minoan period (LMIA, c. 1650-1550 BC.). Massive ashlar limestone blocks supported the earlier structure's 52m (173 ft) back wall and 86m (283 ft) side walls that faced a court paved with pebbles and flanked by a commercial *stoa* and large rooms. Beneath this Minoan complex are remains (center bottom of photo) of a substantial even earlier building (the preceding MM period), possibly destroyed by earthquake. Courtesy of Joseph W. Shaw.

plying the Nile and the Levantine coast had employed a single sail of papyrus or sewn cloth for perhaps a thousand years. The cloth sail did not appear in the Aegean until about 2000. As it was improved, it revolutionized the art and science of seafaring for peoples able to concentrate some of their collective energies on maritime activities. The timing of the Aegean peoples' harnessing of the wind would indicate that it was a cause or a consequence of the high Minoan civilization.

The palace complexes could and did centralize the quality and quantity of ship development and the construction of seaport facilities to accommodate ships in the vital Cretan coastal traffic as well as overseas. Harbor facilities were developed in areas which combined a suitable anchorage and flat beaches, usually where streams flowed into the sea. Warehouses and ship sheds were erected close to shore and stream, as was the case at Levantine ports. Heavy laden cargo ships anchored close inshore for offloading, clearly on to smaller rowed boats whose relatively flattened hulls enabled them to be pulled up onto the beach. The larger cargo ships could not be beached until emptied, lest the hull be damaged, and then they were probably hauled ashore over log rollers. Artificial breakwaters or mooring structures seem not to have been erected, although in several cases offshore islets or rocky masses acted as virtual reefs and were possibly connected to the shore by a natural

Figure 2E. Looking west from the rear wall of the Mycenaean ship sheds to the beach and the Bay of Mesara. A natural offshore rocky outcrop is situated in line between the island of Paximadhia (right, horizon) and the two bushy trees near the shore (right). The large promontory of the Nisos peninsula (left) offered some shelter from south winds for shipping. Fishing was plentiful here, especially for tuna around Paximadhia. Photograph by the author.

spit or causeway. Such arrangements gave anchored vessels some shelter from high winds and waves.[43]

The palaces were each served by substantial ports. In the north, Knossos initially relied upon Katsambas, 5 km (3 mi) north of the palace, but during the expansive Neopalatial period (MMIII–LMI) added a larger complex on the bay at Amnisos (fig. 1) some 8 km (5 mi) east of Katsambas and another at Nirou Khani another 5 km east of Amnisos. All three were connected by roads to Knossos, making it the largest Minoan urban seaport complex. In addition, the two sheltered coves of the large desert island of Dia, some 10 km (6 mi) offshore, may have played a role. Malia, situated directly behind the beach, took advantage of a large roadstead to handle its maritime traffic. On the south coast, Kommos (fig. 2) steadily grew in size as the seaport of Phaistos, especially during the Neopalatial period. In the east, Zakros faced directly on the sea, sheltered in a bay flanked by towering mountains. Harbor facilities were operated by the flourishing seaport towns of Palaikastro (east coast), Gournia (northeast), and Kydonia (northwest).

Archaeologists agree that some sort of organizational trading infrastructure existed to provide control, funding, and record keeping for ships and cargos. Because the palaces provided this for the general economy, and probably administered their respective seaports as well, the palaces likely extended their authority over directional commercial shipping. At issue, however, is whether an actual middle class of freelance commercial maritime entrepreneurs

developed to direct overseas commerce. Some scholars take the position that such an independent or semi-independent merchant class evolved which could seek out new markets and sources of raw materials and in so doing act as relatively free agents. Others argue from the minimalist position that luxury items for the ruling elites dominated Minoan trade and required only a simple system of distribution instead of a full blown commercially oriented society based on set prices, profit motives, and private enterprise.[44]

At the very least, expertise and coordinated effort were critical to make the Minoan seafaring enterprise work. Just as the four palaces shared basically identical architectural layouts and functions, the same may be said of harborside works. The principal archaeological evidence comes from the magnificent LM ship fresco recovered from the ruins of Akrotiri, port of Thera, and the palatial like commercial structure at Kommos. Although Thera may have developed independently of Minoan control, and Kommos was eventually overlaid with Mycenaean structures, both were fundamentally Minoanized. They featured large buildings probably for ship storage. The production of stone anchors and cloth sails were flourishing industries, probably housed in shoreside workshops. That Minoan weavers used looms to fashion cloth suitable for sails is evidenced by many recovered loomweights.[45]

The size, shape, and style of the ships which operated out of the ports of Minoan Crete are known from four major sources: impressionistic engraved images on tiny sealstones from all historical periods; larger but equally stylized painted depictions on pottery throughout the Aegean; the carefully portrayed ships on the Akrotiri fresco of before 1628; and late Bronze Age post-Minoan shipwrecks — or rather their extant cargoes — off Anatolian Ulu Burun (or Kas) (fourteenth century) and Cape Gelidonya (thirteenth century). Given the Cretan contexts of the sealstone finds, their images surely mimic actual Minoan watercraft. Some ships painted on pottery and on the fresco, however, may represent those of other Aegean islands and/or the Mycenaean mainland instead of Minoan. Underwater and landlubber archaeologists alike differ over the origin of the two wrecked vessels, probably Levantine or Mycenaean, possibly tramps.[46]

Figure 3A. The earliest known depiction of a Minoan ship, c. 2000 BC (EMIII/MMIA), is from a three-sided "gable-shaped" ivory seal found at Tholos Tomb B, Platanos. The oblong scene shows stylized ship with curved hull and (left to right) stern appendage, mast, boom, rigging, and high pointed prow, two dolphins, and a possible four-prong "trident." Courtesy of *CMS*, Marburg, Germany.

From the physical evidence, archaeologist Michael Wedde has argued persuasively that the Minoans developed such an efficient and standardized merchant ship that they were able to dominate the Aegean sea trades throughout most of their history. They first experimented with the centuries-old narrow, flat-bottomed longboat depicted on the "frying pan" objects of Cycladic Syros, a short range interisland craft propelled by 30 to 60 paddlers. At some time around 2000 (EMIII/MMII) the Minoans came up with an 8 to 12 m (26–39 ft) long sail-rigged and rowed ship with a slightly curved, broader hull and a protokeel. The square sail may have been suggested by Levantine sailing ships which called during the international

trade boom of the twentieth century and improved by imported flaxen sailcloth from Egypt. With a crew of eleven to fifteen men, the new Minoan ship could sail long distances on the open sea, using the auxiliary oars or paddles when the mast was lowered in becalmed air and for entering and leaving port. The earliest surviving depiction of this ship is from a sealstone found in a cemetery at Platanos near Phaistos (fig. 3). Wedde believes it to have been "the workhorse of the expanding Minoan economy."

The technological ceiling (optimum design) of the Minoan sailing merchantman was achieved around the start of the Neopalatial period (MMIII, c. 1700) with the sleek, swift crescent hulled ship depicted in the Thera fresco (cover illustration). Sizes probably varied from smaller vessels of 10 to 14 m (33– 46 ft) up to the 35 m (115 ft) rapid sailer for the longest voyages. The sail was probably the main source of propulsion, although some scholars have argued for the oars, up to nineteen on a side, which would mean it was primarily a galley. The number of oarsmen may well have been partly determined by the need for self defense, meaning naval functions as an armed merchantman. This design was probably standardized under the central authority of Knossos and may have been so superior as to achieve distinction as the Keftiu ship type later recorded by the early Eighteenth Dynasty Egyptians. By that time, c. 1500 (LMIB), its essential attributes may have been adopted by Egyptian, Syro-Canaanite, and Mycenaean shipwrights.[47]

The two largest ships in the Thera ship fresco mural of the mid-seventeenth century are the most detailed depictions of the Minoan sailer and deserve close examination. The scenes include five other large ships, one under sail, and several smaller vessels in various modes of being rowed or paddled. The rounded hull (fig. 4) has a high prow, low stern, low freeboard, after deckhouse or cabin, and steering oar, a single mast with square sail just forward of amidships, and a retractable waterline stern appendage variously interpreted as a stabilizer, gangway, and/or cult device (fig. 5). Naval architect Thomas C. Gillmer has assigned it likely

Figure 3B. The circular scene includes a quadruped (stag?) flanked by what may be (top) a stylized hull and (bottom) an inverted ship with hull. Courtesy of *CMS*, Marburg, Germany.

dimensions: length 24 m (79 ft), beam 3.7 m (12 ft) when fully loaded, deepest draft one meter (3.28 ft), deep displacement nineteen tons. Whether the ship had a lower structural centerline plank is unknown, but certainly not a keel, which did not appear for at least another century. With a full sail area of 58.8m (633 sq ft), Gillmer calculates the vessel could have achieved a speed of 9.7 knots in a 15- to 20-knot wind. The two depicted large ships are being propelled through inshore waters by between twenty-one and twenty-three paddlers on a side.[48]

Figures 3C, 3D. The scenes of the ivory seals as sketched. Their actual sizes are 2 cm x 1.5 cm and 2 cm diameter respectively.

Figure 4. One of the large ships and parts of others depicted on the Thera fresco are seen pieced together shortly after it was excavated (before cleaning and restoration) at Akrotiri by Spyridon Marinatos in 1972. Furled sail, mast, rigging, and paddles are clearly visible, with dolphins portrayed above. Courtesy of Spyridon Marinatos.

Of especial importance were the sailing qualities of Minoan and Aegean vessels suggested by the Thera mural ship depictions. Contrary to a general supposition that such early square-sailed ships could only sail with following winds (directly astern) and only half the year, recent seawise scholars and practitioners have argued that the reverse was true. Hara S. Georgiou explains that because Aegean ships under sail always had to adapt to weather changes, their shipwrights and sailors surely experimented with sails and rigging until they achieved the ability to sail at close angles to the wind. They learned to reduce the sail area, reefing, and alter its shape with the use of brail lines in the rigging. The result was the ability to sail close hauled, nearly into the wind. In addition, to increase stability when sailing in the strong and potentially destabilizing following winds, they located the mast just forward of ship's center. Georgiou believes, moreover, that the preferred tack of the Aegeans and Minoans was sailing free, in reaching winds (over the beam, and forward and abaft of it) "the fastest and smoothest tack" in which "higher speeds can be consistently achieved" than by sailing downwind, especially given the fairly narrow hull of the Thera ships. This meant they could be sailed in most directions and theoretically at any time of year.[49]

The Thera ship mural also reveals that the standard seventeenth century cargo ship could be adapted to ceremonial and naval uses. The mural incorporates several motifs or themes: a returning voyage or nautical religious festival, troops ashore apparently being embarked, and spongers or possibly swimmers or sailors drowned from storm or battle (fig. 6). The larger ships' naval functions, self defense and/or amphibious raids, are suggested by onboard bronze tipped long lances and boar's tusk and leather helmets.

Figure 5. The stern of one of the Thera fresco ships, photographed shortly after excavation, shows (right to left) a large starboard side steering oar with helmsman; the cabin with head of the captain or other important personage; lion's head (real or carved); and waterline appendage fastened to the hull above the waterline by chain-like lines for raising and lowering it into the water. Excavator Marinatos called it an *apobathra* — ramp and/or stabilizer. Because of the lion head, he thought the name of the depicted vessel might have been *Lion*. Courtesy of Spyridon Marinatos.

Indeed, the men seen paddling may well have doubled as the marine warriors who used these implements. The troops ashore display lances, thrusting swords, and hide covered body shields. Minoan palace workshops produced these as well as bronze daggers and fashioned sling thrown stone bullets. The apparent retractability and stern location of the ship's waterline appendage rule out its use as a possible ram. Indeed, no specialized Aegean longships for fighting naval battles existed until well after the end of the Minoan civilization.[50]

If one accepts historian Lionel Casson's argument that the "mainstream of nautical development" throughout antiquity lay in Crete and other Aegean polities rather than Egypt or the Near East, then Minoan vessels were probably most influential on other peoples who took to the sea, rather than the reverse. This would have been most dramatic during the very peak of Minoan civilization, the sixteenth century (LM-IB). Lack of surviving evidence, however, forces the scholar to argue from silence. The warrior societies which dominated mainland coastal regions at that time no doubt utilized regionally built watercraft of some sort: the Syro-Canaanites in the Levant, the Mycenaeans in Greece, and the Hyksos in Egypt. Minoan open sea sailing vessels, however (the Keftiu type ship of Egyptian record?) flourished throughout the century and into the next. When the New Kingdom pharaohs liberated Egypt and the Levantine port cities at mid-century, Syro-Canaanite shipwrights were free to develop new competitive

Figure 6. The upended cabin of a ship (arrow) and attitude of the figures in the water led Marinatos to interpret this Thera fresco scene as a shipwreck. Others have suggested that the men are swimmers diving for sponges or perhaps sacrificial victims of cult rituals. Courtesy of Spyridon Marinatos.

ships of their own and probably also for the Eighteenth Dynasty at its royal dockyard near Memphis. They may well have incorporated Minoan designs in the ships which transported Thutmoses I's and III's armies to Syria, rather than merely strengthening less seaworthy Nilotic craft. The Mycenaeans who succeeded the Minoans probably simply adopted Minoan designs. Wedde makes the strong case that during their late imperial period, when faced with enemies land and sea, the Mycenaeans initiated the first true decked galleys for swifter amphibious operations rather than ramming, and that this design survived until the dawn of Classical Greece.[51]

Common determining factors of both ship and seaport development were the goods for export and import and the containers in which many were stored and transported. Aside from crafted luxury items which took up little room, agricultural products and raw materials occupied most of the space on board ships and in shoreside warehouses. The Minoans stored and exported perishables (grain, spices and herbs, honey, olive oil, wine, purple dye, cloth) in large ceramic jars (*pithoi*) which probably also became trade items in themselves. Wood and transshipped copper ingots (fig. 7) and ivory tusks were stacked. Raw materials that probably served also as ballast were copper, tin, lead, obsidian, gold, and silver. Perhaps specialized wooden containers were fashioned for tools, weapons, jewelry, pottery, stoneware, figurines, and items originating from very distant regions like lapis lazuli from Afghanistan, amber from the Baltic, and ostrich shells and hippopotamus teeth from Africa. Any exotic animals (as depicted on frescoes) would have required cages of some sort (monkeys, cats, birds) while the horses introduced by the Mycenaeans meant very specialized shipboard arrangements.

## Trade Routes and Navigation

The seafaring season of the Bronze Age Aegean lasted from mid-April to mid-October, bracketed perhaps by several more days in Levantine waters. Then, as now, the climate was dry and mild, currents running 12 to 24 knots, with optimum winds, the Meltemi (Etesian Winds), fresh to moderate (11–21 knots), blowing out of the northwest between mid-June and late August. Local currents and winds varied from place to place but in general prevailed from the north throughout the summer. Although sailing ships could theoretically navigate year round, the general supposition is that during the chilly, stormy, wet months of November to March most were laid up on shore and covered.[52]

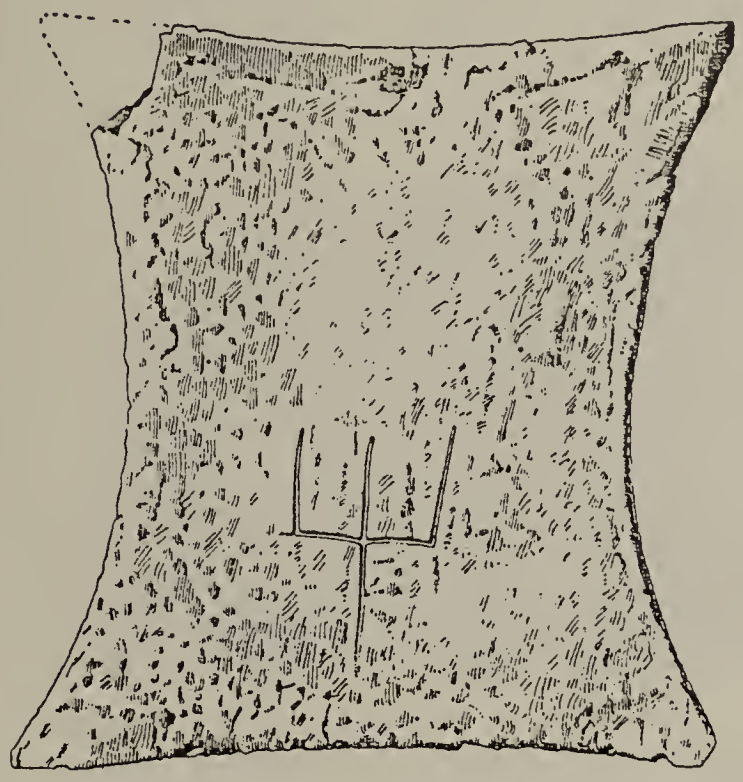


Figure 7. Minoan or Mycenaean copper ingot from the town of Ayia Triada displays a trident, probably as a Linear A sign to denote ownership. As a mason's mark on Minoan sacred architecture, the trident has been interpreted as a representation of a Minoan goddess with upraised arms. It survived throughout Mycenaean times and beyond until it became scepter of Poseidon, Classical Greek god of the sea. Copper ingots, essential for smelting with tin to forge bronze, were shaped like a stretched ox hide for transporting in bulk in Bronze Age ships. After Evans, *Palace of Minos*.

Initially, the third millennium (EMI–III), when the Aegean summer currents and winds pushed southward against the Cretan north coast, also affected by a westward current, runs by the rowed and paddled craft of the day were easiest from the southern Cyclades to Crete, rather than the reverse. This, and the search for migrating fish, probably accounted for the Cycladic islanders' maritime activities during this millennium.[53] Early Minoans exploited local currents to ply their own coast for fish, and rudimentary trade between settlements until the introduction of the sail in the twentieth century (MMI) liberated them to travel throughout the Aegean even against contrary currents and winds. The sail also extended their range to the east, the Levant and Egypt.

Several scholars suggest that the large Bronze Age sailing vessels plied the eastern Mediterranean in a counterclockwise direction. From Kommos and Zakros, ships took advantage of currents and following winds (astern) from the north and northwest to sail south and southeast to the coast of North Africa, then eastward along it to the Delta of the Nile. Or they could sail directly to Egypt, a voyage of five days in fair weather.[54] The same winds enabled them to work northward from Egypt by sailing close hauled along the Levantine coast to Ugarit. From there, ships headed westward in reaching winds to Cyprus and along the south coast of Anatolia to the southern Dodecanese (Rhodes, Karpathos, Kasos) and finally Crete. During midsummer, this leg of the trip would have required deft shiphandling against Meltemia headwinds in rocky coastal waters. On this track the Cape Gelidoniya and Ulu Burun wrecks occurred.

An alternative direct return voyage from Egypt to Crete would have meant sailing close hauled to the northwest but with the advantage of less hazardous open seas. During September, southerly breezes from Africa provided a downwind (northward) push. Such Crete-bound ships from Egypt might have been blown to the east of Crete to the southern Dodecanese or even south-

western Cyprus. Yet, this route was still shorter than the counterclockwise one via the Levant and southern Anatolia. In any case, skilled Aegean seamen daily expected breezes from all directions in spite of prevailing winds and currents.[55]

Whether paddling, rowing, or sailing, Minoan seafarers and foreign vessels visiting Crete had to be able to navigate beyond sight of land day and night. On a clear day at sea, the horizon from Bronze Age vessels with their low freeboards was about 32 km (20 mi), although midsummer atmospheric hazes could reduce visibility to less than three kilometers. Because most Aegean islands lie within 40 km (25 mi) of another island or coast, crews could navigate with reference to distant mountain tops visible above horizon and haze and by correctly reading and exploiting winds and currents. If contrary seas prevented a voyage from being completed in daylight, ship masters needed skills for night cruising or, if possible, put in at an intermediate beach or sheltered cove.[56]

The first important overseas destination of Cretan mariners was Kythera, whose southern tip lies 80 km (48 mi) from the northwest corner of Crete. About half way lies the small island of Antikythera, suitable for a one night layover. Not surprisingly, as early as the third millennium (EMII), the Minoans founded their first overseas colony at Kythera, eventually developing a major settlement at Kastri on its south shore. From the north end of Kythera, Minoan traders could see the south coast of the Peloponnesian mainland, only 15 km (10 mi) distant. This was Laconia, rendered relatively inaccessible however by turbulence created from opposing currents and winds around its two great peninsulas.[57]

Minoan voyagers from Kythera had to skirt the eastern one and head north for direct trade with Lerna in the Argolid and even then against a northerly current. The advent of sail during the twentieth century (MMIA), however, apparently enabled Kythera-based ships to overcome Laconia's currents by trading directly with Laconian Ayios Stephanos.[58]

The same sort of island hopping by rowed boats occurred during the EMII period in the other direction, northeastward: the Dodecanese islands of Kasos, Karpathos, and Saros. Kasos lies 45 km (27 mi) east-northeast of the northeast tip of Crete, from which it can be seen on clear days. Minoan traders frequented the numerous coves of Kasos first, then of Karpathos just 6 km (3½ mi) beyond; Saros further on is separated from Karpathos by only 95 meters (313 feet). The jump from Saros to Rhodes is only 48 km (29 mi), beyond which lies the Carian peninsula of southwestern Anatolia. The Minoans established settlements on all these islands, notably the seaport of Trianda on Rhodes, during the twentieth century (MMI), and enlarged them into bona fide colonies during the Neopalatial period after 1750. Ships from Crete used these same islands as a bridge to trade northward through the Dodecanese islands of Telos, Kos, and Samos and mainland Knidos, Iasos, and eventually also Didyma and Miletus in Caria. Rhodes was probably the contact point for passages to and from Cyprus, 500 km (300 mi) to the east, and the Levant, 95 km (57 mi) beyond Cyprus.[59]

Navigating the shorter interisland trade routes in muscle-powered boats would not have been difficult for native Cycladic islanders, given the apparent sturdiness of their vessels dating from the mid-third millennium. Equipped with 50 oars (divided between each side), these longboats may have averaged six knots speed for one day voyages between islands. Such boats connected the many Cyclades islands with one another and even for occasional trading runs to Crete. The ability of early Minoan paddled vessels to reach the distant Cyclades was another matter, given the prevailing northerly currents and winds.[60]

The third nearest island objective from Crete (after Kythera and Kasos) was Thera, southernmost of the Cyclades. Lying 100 km (60 mi) due north of Crete, Thera might have been reached by Minoan paddled or rowed craft cruising day and night, possibly using a staggered watch bill of men at the oars and carrying sufficient food and water. The appearance of sailing ships, however, made the trip to Thera much easier and faster, although no Cretan-Cyclades trade seems to have existed throughout the twentieth century (MMIA). When it resumed, however, Thera's port of Akrotiri quickly became important,

probably serving as the forward Minoan trade entrepot for imports from the Cyclades and the Greek mainland during the nineteenth and eighteenth centuries (MMIB– MMII). Raw materials from the Laurion mines in Attica (copper, silver, lead) could have been brought to Thera on Aegean vessels from Kolonna on Aegina, Ayia Irini on Kea, and/or Phylakopi on Melos, then transshipped to Crete on Minoan ships. And Minoan craftsmen may well have been planted at mainland Greek settlements to produce Minoan objects for local consumption.[61]

This all changed when Minoan shipping clearly dominated the trade routes within the southern Aegean and much of the eastern Mediterranean throughout the Neopalatial period between the late eighteenth and early fifteenth centuries (MMIII– LMIB). The Minoans appear to have established two main "strings" of island trading settlements and/or colonies. The western string consisted of Cycladic Thera, Melos, and Kea for direct contact with the Greek mainland. The eastern string embraced the Dodecanese and coastal Caria. Minoan trade links with the Levant and Egypt, and possibly a port of call at Marsa Matruh in Libya, grew apace.[62]

Figure 8. Minoan navigational compass? Stone (schist) mold found near the Minoan seaport town of Palaikastro in eastern Crete depicting a large and a small double axe (labrys), most sacred of Minoan symbols. The entire mold is 22.5 cm (9 in) long, 10 cm (4 in) high, and 2 cm (3/4 in) thick. The wave-like edges of the larger axe, probably representing the sea, and the three straight lines of each side are symmetrical to each other, the connecting internal diagonals and arrangement of dots not so. Terra cotta impressions of this larger axe, 12 cm (almost 5 in) long, could have been carried by Minoan navigators to establish general directions. From *Archaiologike ephemeris*, 1900.

Given the earliest probable Minoan overseas trade contacts at least by the mid-third millennium, one must assume an even earlier development of navigating skills beyond sight of land. Like all Aegean seafarers, the Minoans would have used the changing celestial and seasonal positions of sun, moon, and stars as well as winds, currents, and flights of shore sighting birds to chart their courses. As the range and time of their voyages increased, along with the need to cruise at night, they very likely developed a sophisticated knowledge of the constellations and key bright stars as fixed navigational reference points. Indeed, astronomer Michael Ovenden has calculated that it was the Minoans who, in order to set up a simple navigational system, created most of the constellations (passed down to the Greeks and thence to the modern world). He and others believe they did it all at once, at some point between 3400 and 1800, but probably about 2500. If so, their navigational skills had become sharply honed by the time of their trade hegemony after 1750.[63]

No doubt these secrets of navigation — like, for example, the memorized star compass of the Gilbert islanders in the Pacific — were passed down by oral tradition. As Minoan seaport towns and overseas settlements matured, and trade increased, Minoan leaders may well have introduced formal instruction in celestial navigation for neophytes. The optimum places to view the spectacularly clear night skies over Crete were mountain tops, where, in fact, many Minoan peak sanctuaries were situated the entire five centuries of Minoan civilization. Each major coastal palace and town had one nearby, as did the flourishing overseas colony on Kythera.

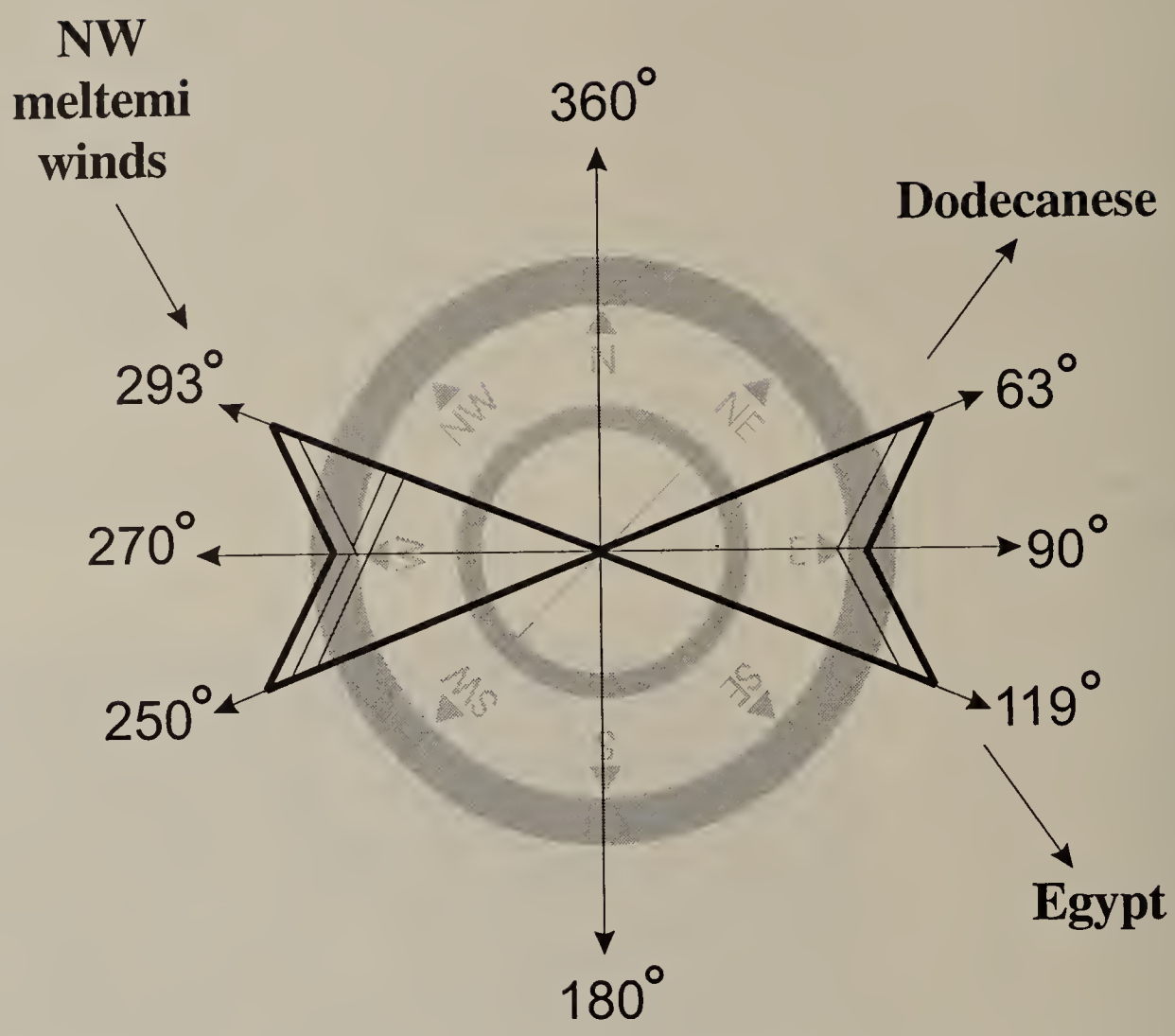



Figure 9. Holding the "axe" flat with the top of its "handle" aimed in the direction of the celestial north pole (360°), the navigator could locate the cardinal points by the four crossed lines so noted, which included sunrise (90°) and sunset (270°) on the equinoxes. The straight "edges" of the geometrical axe would point close to sunrise and sunset on the solstices as seen from Crete, the southern Aegean, and eastern Mediterranean. From Crete, summer solstice sunrise occurs at 61°, sunset 299°; winter solstice 119° and 241° respectively. The numbers given in the drawing are from a pocket compass, which revealed the cardinal points to be perfectly aligned by the mold, the solstitial points less so but probably adequate for general navigational use. The internal diagonals might have denoted prevailing summer currents and winds (like the Melteme, or meltemi) and/or sailing directions: northeast to the Dodecanese, southeast to Egypt, etc.

Recent studies of the Mt. Petsophas peak sanctuary adjacent to coastal Palaikastro have revealed remains of stone walls aligned to the rising points of key guide stars during the summer months, interpreted as the location of a possible school of navigation.[64]

Although no obvious evidence survives of navigational instruments, charts, or rutters (sailing directions), such may have existed but on perishable wood, hide, or cloth; witness the hand-held stick charts of ancient Pacific Melanesians for indicating directions of wave patterns.[65] Perhaps some more durable navigational direction indicators have survived but remain to be understood as such. One possible candidate is a stone mold found at Palaikastro used to produce 12 cm (5 in) long hand held terra cotta objects that could have been issued to sea captains at that or any port in Crete. The mold contains the shape of a geometric double axe (*labrys*), most sacred of Minoan symbols but stylized by a wave like border suggesting a nautical function (figs. 8 and 9).[66]

The molded object could have been held flat, the upper end of its handle pointed toward the north celestial pole. Due to precessional shift, the pole was not located near Polaris during the Bronze Age. It was closest to Thuban in the

constellation Draco. The lower end of the handle would then have indicated south (180°), the intersecting cross line due east (90°) and west (270°), the cardinal points. In such a scheme, this east-west line would also mark the directions of sunrise and sunset on the equinoxes, March 20/21 and September 22/23, dates which roughly bracket the Bronze Age sailing season.

The upper geometrical edges of the north aimed double axe would align with the extreme annual positions of sunrise and sunset at the summer solstice in the southern Aegean and eastern Mediterranean, June 21/22, calendrical midpoint of the sailing season. These solar positions from Crete are about 61° and 299° respectively, with maximum two degrees differences from Attica and from the Egyptian coast, the north-south limits of Minoan seaborne activities. The lower edges would align with winter solstice positions, December 21/22, of less functional use for mariners during the off season but a date of apparent religious significance for the Minoans as the return of the Sun. The internal diagonal lines may have indicated prevailing summer currents, winds, and/or sailing directions (fig. 10).[67]

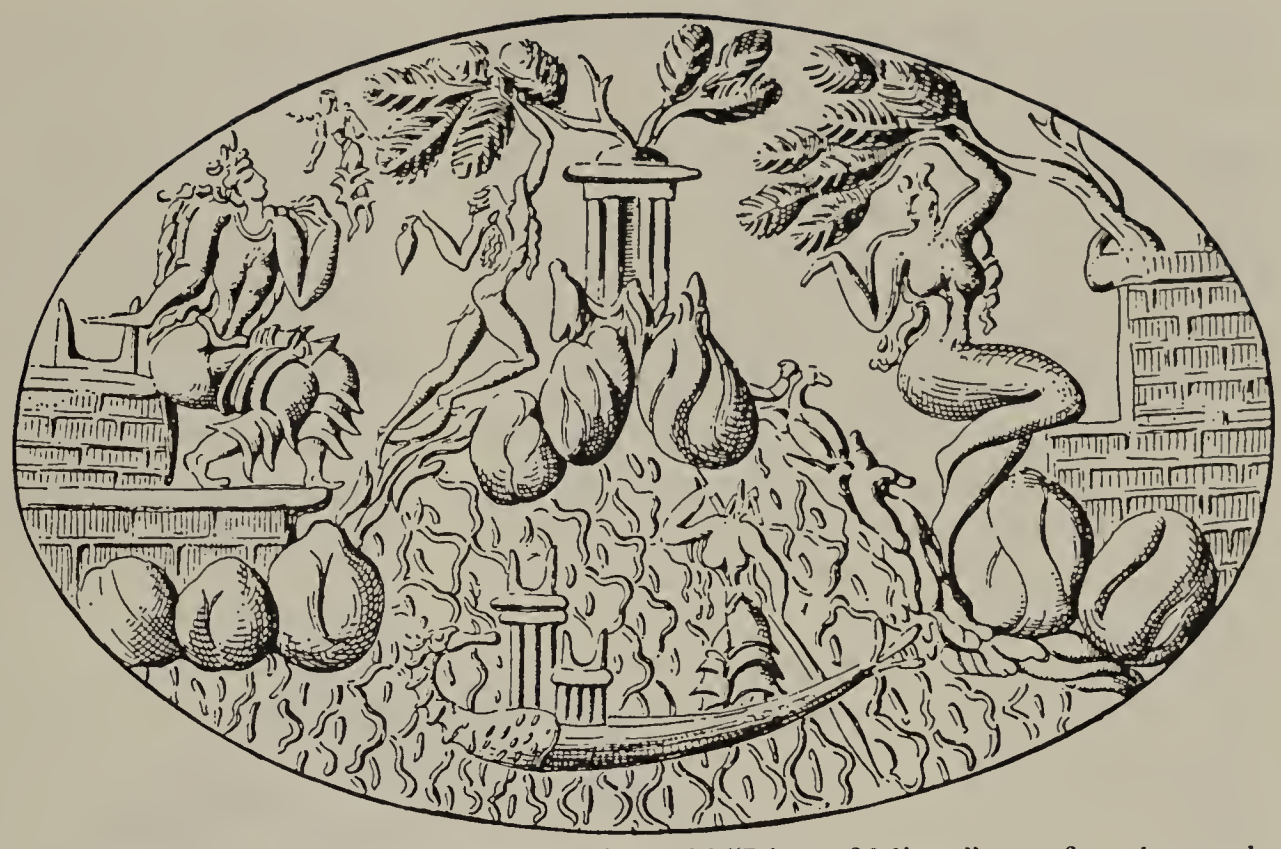


Figure 10. Once considered a forgery, the gold "Ring of Minos" was found near the large Temple Tomb at Knossos (LMI period). It embodies several Minoan religious motifs in a maritime context. Flanked by a dappled sea and coastal boulders, two stepped sanctuaries feature female divinities, one (left) probably the "Great Goddess." Upon the sea, which culminates in a central shrine shored up by boulders, is a seahorse-headed boat guided by a priestess using a steering oar (voyage to the next world?). Two on-board shrines are topped by sacred Minoan "horns of consecration," as is the goddess's altar. Vegetation and a sky deity complete the scene. After Evans, *Palace of Minos*.

Such a combination direction finder calendar would not have been beyond the intellectual and technological capabilities of the ingenious maritime Minoans. What is more, probably not coincidentally, was the prominent role of the double axe in Minoan religion and culture.

## Religion and Culture

Virtually all aspects of Minoan society and culture had religious connotations, not least the maritime dimension. Clues about precise beliefs are found in the extensive iconography of recovered objects and in particular Greek myths with probable pre-Homeric roots. The most prominent feature of Minoan religion was a supreme female deity, regarded by scholars simply as the Great or Mother Goddess due to uncertainty about her Minoan name and/or because of her possible manifestation in many guises and titles. She seems to have been attended by lesser goddesses and gods, including a male consort. Among her several aspects, along

with the sky, vegetation, mountains, animals, and the underworld, was the sea.

"It must be considered certain," declared archaeologist Nicholas Platon, "that the Minoans believed firmly that their thalassocracy, with its conspicuous prosperity in commerce and navigation, was assured by the protection of the great goddess in her special role of a Sea-goddess." In the Minoan cosmos, with Crete no doubt at the center, the Sun rose in the furthest east out of and over the sea and set into it in the west. In contemporary but more ancient Mesopotamia and Egypt, the sun god traveled by sea in the former and in a boat across the sky in the latter, examples of how early peoples merged sea and sky into what the Greeks later called *okeanos*, earthly and celestial waters.[68]

One would logically assume, in the view of Martin Nilsson, that the seafaring Minoans would have found "natural to them... the idea of an Other World situated beyond the sea" and therefore also a belief "in a voyage of the deceased over the sea to a distant...Land of Bliss." Such a belief is strongly suggested by early Cycladic "frying pan" shaped objects showing boats among wavelike spirals and specifically by clay model boats used at sanctuaries and in burials, including the depiction of one on the famous sarcophagus at Ayia Triada. From the Minoans, Nilsson posited, the Greeks might have inherited their version of such a land, the Isles of the Blest and Elysium.[69]

The Great Goddess appears in the iconography as if to bless the navigation of the Minoans upon terrestrial and heavenly waters alike. She, lesser female deities, and/or priestesses are depicted in religious attitudes on several seals and gold rings, most dramatically on the Ring of Minos found near the LM Temple Tomb at Knossos (fig. 10). On it, she sits upon a sanctuary overlooking a dappled sea, upon which a seahorse headed boat moves, guided by the steering oar held by a female figure. The stern ends in a stylized fishtail. Two other sanctuaries feature trees from whose branches nude figures pluck fruits for her. All three shrines are abutted by large seaside boulders. Two smaller shrines are situated upon the boat, both topped by sacred Minoan horns of consecration, as is the Great Goddess' altar. She appears to be facing a smaller female sky deity.[70]

Figure 11. The much-prized sixteenth century BC (LMIB) Minoan "Marine Style" pottery is seen in this "stirrup vase" from a private house at the manufacturing town of Gournia on the northeast coast of Crete. Undersea vegetation accents the head and tentacles of an octopus, whose dynamic naturalism was typical Minoan artistic form. After Evans, *Palace of Minos*.

The Minoan Great Goddess may well have been "Our Lady of the Labyrinth" as a Linear B inscription at Knossos identified a deity of the conquering Mycenaeans there. The mythical labyrinth, located at Knossos, was the mazelike abode of the Minotaur, the Cretan half man, half bull of Greek legend. The word labyrinth was pre-Greek, *i.e.*, probably Minoan, and meant the dwelling of the double axe, from *labrys*. The double axe is generally identified by archaeologists as the chief religious symbol of the Great Goddess. Its possible functional use as a nautical direction finder, as suggested above, would strengthen the case for her maritime aspect.[71]

The religious connection between the sea,

the goddess, life, and afterlife is suggested by other depictions and symbols. The dolphin and several varieties of fish are seen with the goddess on seals and on the floor mosaic of a shrine within the palace of Knossos. Sea creatures adorned libation jugs, likely for pouring the sea water that was considered pure by the ancient Aegeans. One seal shows a male figure holding a triton shell, possibly used as a trumpet on board ship but probably also to summon the goddess (her epiphany). Sea shells and pebbles were used to adorn the floors of sanctuaries and tombs. During the late Neopalatial period (seventeenth and sixteenth centuries, LM) two nautical innovations in religious art became pronounced: Marine Style vases, possibly for cult use, and the adorning of clay coffins (larnakes) with marine life. Both depicted stylized varieties of sea life: octopuses, argonauts, fish, and squid as well as waves and boats (fig. 11).

Many similar images as well as stylized stars and stretched bull hides also appear on and around the several ships of the Thera fresco, intimating the scene to be a religious festival. Ship motifs were depicted on a great number of seals that seem not to have been used for commercial purposes like other seals were and therefore may have been sailors' talismans worn on a string around the foot, wrist, or neck for protection. A likely candidate is the three-sided EMIII–MMIA ivory seal (fig. 3) showing the oldest known depiction of a Minoan ship, along with fish or dolphins and a possible four-pronged trident. Found in a tomb at Platanos, it was probably buried with a sailor. The ivory likely came from Egypt or Syria.[72]

The ship appeared as a figure of the early Minoan hieroglyphic script and on the unexplained and undeciphered Phaistos disk object found at that palace. In addition to boat models, anchors — some too elaborately decorated for functional use — served as votive offerings in sanctuaries. Finally, burial at sea (a return to the Great Goddess?) may have been practiced not only when crewmen died during distant voyages but on a regular basis at shoreside communities.[73]

Finally, among the mason's marks regarded to have been religious symbols are some which may well have been associated with the sea. These incisions were etched on building blocks at all Minoan palaces and on sacred pillars, tombs, and altars, including non-palatial structures at coastal Malia, Amnisos and Nirou Khani.[74]

Four of the most ubiquitous mason's marks bore possible nautical associations: the trident, cross, multirayed star, and double axe. The cross and star also comprised part of the earlier hieroglyphic script and of Linear A, the cross in Linear B as well. The cross was often the sign of the cardinal points, the four corners of the cosmos, in primitive cultures and also useful for navigation. If the star mark actually represented stars, then it must have denoted the Goddess' celestial aspect in nature as well as the navigational utility of guide stars. These star symbols were simple intersecting lines or rays, usually numbering six or eight (some with five or seven). The six rays might have symbolized the celestial poles and the solar solstice positions. A superimposed cross would add the solar equinoctial positions and form eight rays. Either six or eight rayed, this symbol may well have denoted the double axe, whether or not for its utility as the navigational direction indicator posited above.

The trident has come down to modern times as the major symbol of the sea, derived from the scepter of Poseidon and Neptune, Greek and Roman gods of the sea. It seems to have appeared first with the Minoans as a prominent mason's mark in the palaces. In all likelihood identified with their Great Goddess, its three prongs perhaps symbolized her tripartite cosmic manifestations: sea, sky, and earth/underworld. A similar representation of the shape, dating also from the earliest palaces, may have been the depictions and figurines of Minoan goddesses or priestesses with raised arms. These icons continued to be fashioned throughout Mycenaean times and after as the "goddess with upraised arms" in archaeological labeling, also identified with the Greek letter *psi*. Indeed, the trident was a syllable sign in both the Linear A and Linear B scripts and therefore used as a symbol of ownership and administration, further strengthening evidence for the "fundamental and lasting" contribution of

Minoan religion to that of the Mycenaeans.[75]

Reconciling the three-part symbol of the female deity with the scepter of the Greek god of the sea may be possible through a careful fusion of archaeological, philological, and mythological evidence. Among the many deities mentioned in the Linear B tablets was the god Poseidon, who presided over the Mycenaean city of Pylos but was also revered at Mycenaean-ruled Knossos. Most Mycenaean deities were very ancient, probably derived from the Minoans. Only the name of Zeus had a purely Indo-European origin, but one syllable of the name Poseidon was Indo-European, making him a composite figure of more than one tradition. The Mycenaeans also worshiped a goddess Posidaeja as counterpart of Poseidon, perhaps reflecting these deities' double sovereignty over Pylos.[76]

In Greek mythology, the god Kronos, son of the heaven and earth deities, assigned the three cosmic realms to his sons: the sky to Zeus, the sea to Poseidon, the underworld to Hades; all three shared the earth itself. Poseidon, in addition to being Lord of the Waters of the Deep, also became the Earth Shaker, a dual role reflecting the powerful storms and quakes that disturbed the Aegean world. Poet and mythographer Robert Graves, who believed that most Greek myth originated in Minoan Crete, observed that Zeus and Poseidon shared the same symbol, the *labrys*. Eventually, Zeus as supreme deity claimed it for himself as the thunderbolt, and Poseidon reshaped it for his role as lord of the sea to resemble the three-pronged trident harpoon used by Aegean fishermen for spearing the tuna (tunnyfish). In real time, the change probably occurred when the conquering Mycenaeans elevated Zeus over the Minoan Great Goddess (and, incidentally, assigned a mountain in Crete as the birthplace of Zeus). As part of this gender shift, Mycenaean priests may well have appropriated the goddess' raised arms symbol to become the trident of Poseidon.[77]

The early Aegean religions (Minoan, Mycenaean, Classical Greek) surely all practiced sea cults which included close associations between deities and certain animals, land and sea, which were honored, then sacrificed to the appropriate deity. The powerful bull, ancient symbol of male fertility and of prime importance to the Minoans, was sacrificed probably to the Great Goddess and certainly later to both Zeus and Poseidon. In the myth of the Minotaur, the Bull of Minos, Poseidon answered the prayer of King Minos of Crete, a son of Zeus, by sending him a white bull from out of the sea. When Queen Pasiphaë coupled with the creature, their offspring was the half man, half bull Minotaur which Minos imprisoned in the Labyrinth at Knossos.

Poseidon, like Zeus, had many offspring, among them Theseus. Theseus in turn rescued sacrificial Athenian youths from the Minotaur by slaying the creature in its lair, thereby sacrificing it to Poseidon. Poseidon was also identified with the horse, and horses were sacrificed in his name by drowning in the sea, probably a Mycenaean addition to his cult, as inferred by classicist Walter Burkert. In addition, Poseidon was closely linked to the dolphin, a major subject of Minoan religious art, and the founding of the Greek religious center at Delphi, the first mythical priests of which were Cretan seafarers. Among Minoan cult features passed down to the Greeks were initiation rites which included "the ritual ordeal of the leap into the sea."[78]

The role of religion in reflecting the material prosperity and optimistic culture of the maritime Minoans is further illustrated by the unique way that they depicted the sea and nature at large in their art. Their artistic vision, itself an aspect of Minoan spiritual beliefs, was heavily centered on the sea, in contrast to Mesopotamia and Egypt, whose rivers served only as background in artistic portrayals. Thus art historian Janice L. Crowley has proposed a *thalassa* theory of Aegean art based on a humanistic view of life that involves the eye of the individual beholder instead of the more rigid artistic conventions of the rest of the ancient world. Their sea-oriented works, especially in the MMIII–LMIA period, she argues, reflect five aspects: a delight in natural physical detail, "movement as an essential quality of life," an immediacy of the action portrayed, an abstract sensitivity to patterns and to "dynamism in living forms," and a repetition of naturalistic motifs and themes as an artistic process from wave patterns to leaping animals on land (fig. 11).[79]

## Conclusion

The civilization of the Keftiu — our Minoans — seems to have planted the seed of Western Civilization during the Bronze Age. They did it by developing a high culture heavily based on maritime trade, unique for Europe and the world at the time but sufficiently grand and influential to have been imitated by the conquering mainland Mycenaeans and to have survived in myth and oral traditions until the emergence of Classical Greece. In spite of their undeciphered language and untimely collapse, the Minoans fully deserve recognition and study alongside Mesopotamia and Egypt for their early role in helping to shape European and world history.

*Clark Reynolds is professor of history at the University/College of Charleston, SC, where he teaches courses on European, naval, and US strategic history and on Minoan civilization. Among his several books is* Command of the Sea: The History and Strategy of Maritime Empires. *He is currently writing a primer of naval history.*

# Approximate Chronology (BC)

(Sturt W. Manning, *The Absolute Chronology of the Aegean Early Bronze Age* [Sheffield, UK: Sheffield Academic Press, 1995])

| | |
|---|---|
| PREPALATIAL PERIOD | 3100 to 1900 |
| Early Minoan I | 3100/3000 to 2700/2650 |
| EMIIA | 2650 to 2450/2350 |
| EMIIB | 2450/2350 to 2200/2150 |
| EMIII | 2200/2150 to 2050/2000 |
| Middle Minoan IA | 2050/2000 to 1925/1900 |
| PROTOPALATIAL PERIOD | 1900 to 1750 |
| MMIB | 1925/1900 to 1900/1875 |
| MMII | 1900/1875 to 1750/1720 |
| NEOPALATIAL PERIOD | 1750 to 1475 |
| MMIII | 1750/1720 to 1700/1680 |
| Late Minoan IA | 1675/1650 to 1600/1550 |
| LMIB | 1600/1550 to 1490/1470 |
| LMII | 1490/1470 to 1435/1405 |
| POSTPALATIAL (Mycenaean) PERIOD | |
| LMIII | 1435/1405 to 1200/1190 |

# Suggested Readings

*Amidst the constantly appearing specialized works, a few books serve as general introductions to Minoan civilization and its maritime aspects.*

Castleden, Rodney, *Minoans: Life in Bronze Age Crete* (New York: Routledge, 1990)

Doumas, Christos, *Santorini* [Thera]. (Athens, 1987). Available from University of Pennsylvania Museum Publications.

Higgins, Reynold, *Minoan and Mycenaean Art*, rev. ed. (New York: Oxford University Press, 1981)

Hood, Sinclair, *The Minoans: The Story of Bronze Age Crete* (New York: Praeger, 1971)

Michailidou, Anna, *Knossos* (Athens, 1989). Available from University of Pennsylvania Museum Publications.

Willetts, R. F., *The Civilization of Ancient Crete* (Berkeley: University of California Press, 1977)

A few specialized works serve the reader having a general familiarity with the subject.

Dickinson, Oliver, *The Aegean Bronze Age* (New York: Cambridge University Press, 1994)

Morgan, Lyvia, *The Miniature Wall Paintings of Thera* (New York: Cambridge University Press, 1988)

Myers, J. Wilson, Eleanor Emlen Myers, and Gerald Cadogan, eds., *The Aerial Atlas of Ancient Crete* (Berkeley: University of California Press, 1992)

Watrous, L. Vance, "Crete from Earliest Prehistory through the Protopalatial Period," *American Journal of Archaeology*, vol. 98, no. 4 (October 1994), 695–753.

# Notes

1. E. and Y. Sakellarakis, "The Keftiu and the Minoan Thalassocracy," Robin Hägg and Nanno Marinatos, eds., *The Minoan Thalassocracy: Myth and Reality* (Stockholm: Paul Aströms, 1984), 199–200 (hereinafter *MT*); Shelley Wachsmann, *Aegeans in the Theban Tombs* (Leuven, BEL: Uitgeverij Peeters, 1987), especially 93–102; John Strange, *Caphtor/Keftiu: A New Investigation* (Leiden, NETH: E. J. Brill, 1980), 11–12, 113–184, which however takes the minority view that Caphtor was Cyprus. A complete listing of ancient references to Keftiu and its variations is in Eric H. Cline, *Sailing the Wine Dark Sea: International Trade and the Late Bronze Age Aegean* (London: BAR International Series 591, 1994), 108–120.
2. Since physical artifacts must be dated, even if only relative to other artifacts and evidence, the vast literature on Minoan chronology of necessity includes virtually all archaeological studies. Because "modern historical narratives...are impossible when the relevant dates cannot be tied down with precision," Sturt W. Manning has synthesized and reinterpreted all periods of Minoan dating in *The Absolute Chronology of the Aegean Early Bronze Age: Archaeology, Radiocarbon and History* (Sheffield, UK: Sheffield Academic Press, 1995, 33 (quote, paraphrasing A. M. Snodgrass). This dating is summarized in his Appendix 8, which challenges much earlier scholarship, notably Peter Warren and Vronwy Hankey, *Aegean Bronze Age Chronology* (Bristol, UK: Bristol University Press, 1989). In giving "former" dates in the footnotes, I combine the estimates of several other works too numerous to list here.
3. Manning, *ibid.*, App. 8, which revises the former EMI dates of c. 3500 to c. 2900, although (170) possibly allowing for a later start date of c. 3300.
4. D. Wilson, "Knossos Before the Palaces: An Overview of the Early Bronze Age (EMI–EMIII)," Don Evely, *et al*, eds., *Knossos: A Labyrinth of History* (Athens: British School at Athens, 1994), 44. The notion, which has tempted many scholars, of the Minoans as a peace loving folk who eschewed conflict and lived in idyllic bliss may be dismissed out of hand. See Lawrence H. Keeley, *War Before Civilization: The Myth of the Peaceful Savage* (New York: Oxford University Press, 1996), especially 17–39 on prehistoric peace and warfare, and Chester G. Starr, "Minoan Flower Lovers," *MT*, 9–12.
5. Manning, *Absolute Chronology*, App. 8, which subdivides the period into A and B at c. 2450/2350 and revises the former EMIIA of c. 2900 to c. 2550 and EMIIB end date of c. 2300/2150.
6. Or "cosmopolitan feeling," according to Colin Renfrew in his seminal work *The Emergence of Civilisation: The Cyclades and the Aegean in the Third Millennium B.C.* (London: Methuen, 1972), 34, 451–455.
7. Sturt W. Manning, "The Emergence of Divergence: Development and Decline on Bronze Age Crete and the Cyclades," Clay Mathers and Simon Stoddart, eds., *Development and Decline in the Mediterranean Bronze Age* (Sheffield, UK: J. R. Collis, 1994), 224–229; A. Bernard Knapp, "Spice, Drugs, Grain and Grog: Organic Goods in Bronze Age East Mediterranean Trade," N. H. Gale, ed., *Bronze Age Trade in the Mediterranean* (Jonsered, Sweden: Paul Aströms, 1991), 21–68.
8. L. Vance Watrous, "The Role of the Near East in the Rise of the Cretan Palaces," Robin Hägg and Nanno Marinatos, eds., *The Function of the Cretan Palaces* (Stockholm: Paul Aströms, 1987), 65–70; James Lewthwaite, "Why Did Civilization Not Emerge More Often? A Comparative Approach to the Development

of Minoan Crete," Olga Krzyszkowska and Lucia Nixon, eds., *Minoan Society* (Bristol, UK: Bristol Classical Press, 1983), 171–183. A dissenting view, in the latter volume, is John F. Cherry, "Evolution, Revolution, and the Origins of Complex Society in Minoan Crete," 33–45.

9. Manning, *Absolute Chronology*, App. 8, which revises the former EMIII dates of c. 2300/2150 to c. 1900.
10. *Ibid.*, App. 8, which only slightly revises the former MMIA dates of c. 2100 to c. 1900.
11. L. Vance Watrous, "Crete from Earliest Prehistory through the Protopalatial Period," *American Journal of Archaeology*, vol. 98, no. 4 (October, 1994), 742.
12. Günter Koepke, "The Cretan Palaces and Trade," *Function of the Cretan Palaces*, 258: "...signs of coercion (the prominent presence of rulers and temples), seemingly indispensable to the running of affairs in the Near East, are strangely missing." Possible defensive walls and watchtowers dating to around 1800 (MMII) suggest intra-island differences between palatial centers. Malcolm H. Wiener, "The Nature and Control of Minoan Foreign Trade," *Bronze Age Trade*, 336–337, which cites the works (in Greek) of S. Chyrssolaki.
13. Cline, *Sailing the Wine Dark Sea*, 86–87, 106, building upon Renfrew, *Emergence of Civilisation*, 465– 474.
14. Manning, *Absolute Chronology*, App. 8, which revises the former dates of MMIB, c. 1900 to c. 1870, and MMII ending at c. 1820/1800.
15. On Minoan craftsmen in Egypt, see Jean-Claude Poursat, "Une thalassocratie minoënne ou Minoen Moyen II?" *MT*, 87, and Sara A. Immerwahr, *Aegean Painting in the Bronze Age* (University Park: Pennsylvania State University Press, 1990), 34–37. Joseph W. Shaw and Maria C. Shaw, eds., *Kommos I: The Kommos Region and Houses of the Minoan Town*, Part 1 (Princeton: Princeton University Press, 1995), 395– 396; Part 2 (1996), 3, 7–9.
16. J. A. MacGillivray, "The Early History of the Palace at Knossos (MMI–II)," *Knossos: A Labyrinth*, 45–55. The thesis of Martin Bernal, *Black Athena: The Afroasiatic Roots of Classical Civilization*, 2 volumes (New Brunswick, NJ: Rutgers University Press, 1987, 1991), that the Hyksos of Egypt destroyed then rebuilt the MM palaces as part of an eighteenth/seventeenth century invasion and colonization of Greece and the Aegean basin has been thoroughly repudiated by the nineteen scholars in Mary R. Lefkowitz and Guy MacLean Rogers, eds., *Black Athena Revisited* (Chapel Hill: University of North Carolina Press, 1996); see especially the essays by Sarah P. Morris (167–174) and John E. Coleman (280–302). They all similarly reject his hypothesis of Egyptian invasions of Greece and the Aegean during the third millennium and the early fifteenth century.
17. Manning, *Absolute Chronology*, App. 8, which revises the former MMIII dates of c. 1800 to c. 1700.
18. A useful treatment of the shaping of this *Koine* in terms of "foreign innovation and acculturation" by the Minoans and the consequent "internal evolution of the local societies" abroad is Manolis Melas, "Acculturation and Social Mobility in the Minoan World," Robert Laffineur and Lucien Basch, eds., *Thalassa: L'Egée Préhistorique et La Mer (Aegaeum 7)*, (Liège, Belgium: University of Liège, 1991), 169–188 (quotes, 187).
19. Gerald Cadogan, "Some Middle Minoan Problems," E. B. French and K. A. Wardle, eds., *Problems in Greek Prehistory* (Bristol, UK: Bristol Classical Press, 1988), 98–99. The origins of Tyrian "royal purple" dye, long attributed to the Canaanites of Ugarit (or rather to their Phoenician successors), appeared in MM murex shellfishing sites at the hill of Kastri adjacent to Palaikastro and on the island of Kouphonisi off the southeast coast of Crete and in probable dye production contexts at Knossos, Malia, and colonial Kythera. Similar shells were found at EM Myrtos but probably for their food value. Robert R. Stieglitz, "The Minoan Origin of Tyrian Purple," *Biblical Archaeologist*, vol. 57, no. 1 (1994), 46–54. Lyvia Morgan, "Minoan Painting and Egypt — The Case of Tell El-Dab'a," W. Vivian Davies and Louise Schofield, eds., *Egypt, the Aegean and the Levant: Interconnections in the Second Millennium BC* (London: British Museum Press, 1995), 30 (hereinafter *Interconnections*). Earlier palace wall paintings had been of geometric designs. John Chadwick, *Linear B and Related Scripts* (London: British Museum, 1987), 44–49.
20. Wiener explains Minoanization as a "Versailles effect," much as French culture influenced eighteenth century AD European peoples. "Crete and the Cyclades in LMI: The Tale of the Conical Cups," *MT*, 17. See also studies for Cycladic Kea, Thera, and Melos in the same volume by Jack L. Davis (159–175), Nanno Marinatos (167–176), and R. N. L. Barber (179–182) respectively.
21. Manning, *Absolute Chronology*, 220–221, App. 8, revises the former LMIA dates of c. 1700 to c. 1610.
22. Robert Drews, *The Coming of the Greeks: Indo-European Conquests in the Aegean and the Near East* (Princeton: Princeton University Press, 1988), 41–45, 153, 159, 170, and passim. Drews' date of the Mycenaean arrival, c. 1600, must be revised to a century or so earlier. Manning, *ibid.*, dates the first Mycenaean pottery period, Late Helladic (LH) I, to "perhaps" 1680 to 1600/1580. The dating of events in Egypt is important in establishing LM chronology but complicated by Egyptologists' three separate dating options: high (earliest), middle (fourteen years later), and low (eleven years after the middle), choices which influence Minoanists accordingly. Manning, *Absolute Chronology*, 16, 17n5, 224, for example, favors high or middle. Egyptian scholars currently favor middle or low, although two recent works use the high: Peter A. Clayton, *Chronicle of the Pharaohs* (London: Thames and Hudson, 1994), 9–13 for an overview of

Egyptian dating, and Donald B. Redford, *Egypt, Canaan, and Israel in Ancient Times* (Princeton: Princeton University Press, 1992), xxiii, 104 on the three options. I am following the middle dating both as a compromise and because it seems to offer a better historical "fit" for the events of LMI and LMII.

23. Ora Negbi, "The 'Libyan Landscape' from Thera: A Review of Aegean Enterprises Overseas in the Late Minoan IA Period," *Journal of Mediterranean Archaeology*, Vol. 7, no. 1 (1994), 73–112, and "Comment on Ora Negbi [essay]," Vol. 7, no. 2 (1994), 237–240; Wolf Dietrich Niemeier, "Minoan Artisans Travelling Overseas: The Alalakh Frescoes and the Painted Plaster Floor at Tel Kabri (Western Galilee)," *Thalassa (Aegaeum 7)*, 189–201, plates XLVI–LI; Peter Warren, "Minoan Crete and Pharaonic Egypt," *Interconnections*, 1–18, also Manfred Bietak, "Connections Between Egypt and the Minoan World — New Results from Tell el-Dab'a/Avaris," 19–28. Bietak, *Avaris: The Capital of the Hyksos* (London: British Museum Press, 1996), not only summarizes the Minoan evidence (see especially Pl. IV) but reviews (80) the possibilities of a pharaonic marriage, maybe in the Eighteenth Dynasty.

24. "Thalassocracy" combines the Greek *thalassa*, the sea, with *kratia* (from *kratos*), strength or power. It meant naval supremacy to the first Greek historians, who applied it to King Minos of Crete: Herodotus, *The Histories*, III, 122 and Thucydides, *History of the Peloponnesian War*, I, 4, who, however, could only "suppose" that Minos "did his best to put down piracy in order to secure his own revenues." In a 1982 symposium discussion (*MT*, 217–220), J. Sakellarakis preferred the Greek *thalassokratia* as the strict "control of the sea" rather than *thalassokratoria* which implies "political control" and thus "disturbs those looking for democracy" in Minoan institutions. Molly Miller, *The Thalassocracies: Studies in Chronography II* (Albany: State University of New York Press, 1971), 1–2, 44–45, 176, argues that the ancient Greek writers regarded thalassocracy as both naval and maritime commercial supremacy, but more than that as a conception for "constructing a history of Greece as a history of sea power," with its broadly conceived "implications and developments, rather than as a history of polis organization or a sum of local histories... ." I have attempted to broaden the fullest meaning of thalassocracy in a number of works, notably my 1977 essay "'Thalassocracy' as a Historical Force," reprinted in my anthology *History and the Sea* (Columbia: University of South Carolina Press, 1989), 20–65, but have opted for a general — and less disputed — title for the present essay. One of the few depictions of an actual Bronze Age amphibious raid, assault, or siege is found on the siege rhyton of c. 1500 which shows a Mycenaean seaborne force attacking a coastal city. See Christos Boulotis, "The Aegean Area in Prehistoric Times," Angelos Delivorrias, ed., *Greece and the Sea* (Amsterdam: De Nieuwe Kerk, 1987), 31, Pl. VI. Stefan Hiller argues that Minoan Crete *was* the leading Aegean military power from MMIII through LMII (c. 1750/ 1700–c. 1380). "Pax Minoica Versus Minoan Thalassocracy — Military Aspects of Minoan Culture," *MT*, 27–30.

25. Fritz Schachermeyr, "Akrotiri — First Maritime Republic?" C. Doumas, ed., *Thera and the Aegean World I* (London: Thera and the Aegean World, 1978), 423– 428 thought the settlement on Thera appeared to have had all the features of an independent international center of trade, including private houses of wealthy merchant families adorned with privately commissioned works of art (Minoan style frescoes). Historian Chester G. Starr has rightly criticized earlier scholars weaned on modern battle fleets and maritime empires who inferred a Minoan "bulwark of wooden walls [i.e., a fleet of men-of-war] standing out to sea against invading armadas." "The Myth of the Minoan Thalassocracy," *Historia*, vol. 3 (1954–55), 286–287. He has also chided certain archaeologists for their reluctance to admit the likelihood that the essentially "peaceful" Minoans might have carried out raids at *sea. The Influence of Sea Power on Ancient History* (New York: Oxford University Press, 1989), 8–14.

26. Gerald Cadogan, "A Minoan Thalassocracy?" *MT*, 13–15, accepts some form of "Minoan control, as I do not see that the appearance of Minoan daily life at so many different places at much the same time may be explained in any other way," certainly by the 1500s but possibly as early as the late Middle Bronze Age (i.e., MMIII). Wiener, "Conical Cups," *MT*, 17–25, regards these ubiquitous Minoan ritual objects as the main proof of control. See also his "The Isles of Crete? The Minoan Thalassocracy Revisited," D. A. Hardy, *et al.*, eds., *Thera and the Aegean World III*, 3 volumes (London: The Thera Foundation, 1990), Vol. 1, 128–160 (hereinafter *Thera III*). R. S. Merrillees, *Trade and Transcendence in the Bronze Age Levant* (Göteborg, Sweden: Paul Aströms, 1974), 7–8; A. Bernard Knapp, "Thalassocracies in Bronze Age eastern Mediterranean trade: making and breaking a myth," *World Archaeology*, Vol. 24, No. 3 (February 1993), 332–347, in which he attempts to "deconstruct" thalassocracies in current sociological jargon. Knapp and John F. Cherry, *Provenience Studies and Bronze Age Cyprus: Production, Exchange and Politico-Economic Change* (Madison, WI: Prehistory Press, 1994), 126–128, argue that Minoan domination of the seas, even only in the southern Aegean, was "most improbable," but add, "except perhaps in the Neopalatial period," *i.e.*, c. 1750/1700 (MMIII) to c. 1490/ 1470 (LMIB): more than two centuries!

27. Manning, *Absolute Chronology*, App. 7, also page 31, in which, given his expertise in radiocarbon dating, Manning argues that such dating techniques and those of dendrochronology (dating by tree rings) are the most accurate, even more so than the use of ice cores,

although even these tend to support the cases for 1645 and/or 1628 eruptions in the Aegean. Recent findings in dendrochronology not only confirm the 1628 date, but place it early in the year, before spring growth (at which time, incidentally, most Aegean ships should have been in winter storage). Peter Ian Kuniholm, et al, "Anatolian tree rings and the absolute chronology of the eastern Mediterranean, 2220–718 B.C.," *Nature*, vol. 381 (June 27, 1996), 780–783. Warren and Hankey, *Aegean Bronze Age Chronology*, 215, however, date the Thera eruption as late as c. 1560/1550 or c. 1535/1525. The hypothesis, first suggested by Spyridon Marinatos in the 1930s, that the eruption of Thera was a primary cause of the collapse of Minoan civilization about 1450 was thoroughly overturned by the geological and archaeological evidence presented at the 1989 Third International Congress at Thera which addressed the subject. Its proceedings are *Thera III*. R. N. L. Barber, *The Cyclades in the Bronze Age* (London: Duckworth, 1987), 32–33, his dating however being LMIB.

28. Manning, *Absolute Chronology*, App. 8, greatly lengthens the former LMIB dates of c. 1620/1610 to c. 1550 or c. 1520/1510, although Warren and Hankey, *Aegean Bronze Age Chronology*, 169, prefer c. 1480 to c. 1425.
29. Drews, *Coming of the Greeks*, 171–172, 179–196; Manning, *ibid.*, dating LH IIA as c. 1600/1580 to c. 1520/1480. The suggestion of O. T. P. K. Dickinson that Mycenaean military successes were due largely to weapons and armor developed in Crete seems unlikely. *The Origins of Mycenaean Civilization* (Göteborg, Sweden: Paul Aströms, 1977), 108.
30. L. Vance Watrous, "Cretan Relations with the Aegean in the late Bronze Age," Carol Zerner, ed., *Wace and Blegen: Pottery as Evidence for Trade in the Aegean Bronze Age* (Amsterdam, The Netherlands: J. C. Gieben, 1993), 81–85. In the same volume, Stefan Hiller, "Minoan and Minoanizing Pottery on Aegina," 197–199, observes that Minoans probably lived and worked at Kolonna, Aegina, judging from the Minoan styles of pottery and loomweights found there.
31. Barber, *The Cyclades in the Bronze Age*, 32–33. Colin Renfrew in Renfrew and Malcolm Wagstaff, eds., *An Island Polity: The Archaeology of Exploitation in Melos* (New York: Cambridge University Press, 1982), 35–42, 225–226, dates the fortifications and Minoan style frescoes, palace/villa, and pottery at Phylakopi, Melos, as c. 1600–1400 and suggests that it was a Minoan colony taken by force. It closely resembled Ayia Irini on Kea and Akrotiri on Thera.
32. Chadwick, *Linear B and Related Scripts*, 50–56. The earliest surviving definite example of "Cypro-Minoan" script is a c. 1500 clay tablet found at Enkomi, Cyprus; this script remained in use for over a millennium until the Hellenistic period.
33. Redford, *Egypt, Canaan, and Israel*, 153–160.
34. Torgny Säve-Söderbergh, *The Navy of the Eighteenth Dynasty* (Uppsala, Sweden: University of Uppsala, 1946), 37–39, 44, 49–50. Wachsmann, *Aegeans in the Theban Tombs*, *passim*, who however follows the high chronology for Egypt. Hatshepsut was technically co-regent with her young brother Thutmosis III but dominant until her death. Their respective dates of rule were: Hatshepsut 1498–1483 high or 1484–1469 middle chronology, Thutmosis III 1504–1450 or 1490–1436 respectively. This meant that Thutmosis III succeeded to power in 1483 or 1469 and launched his first of eighteen annual Mitannian campaigns two years later. In spite of Manning's end date for LMIB at c. 1490/1470, he believes that it likely ended about the middle of Thutmosis III's reign — by 1477 (high chronology), 1452 (middle), or 1440 (low). *Absolute Chronology*, 222–224.
35. Ingrid Strom, "Aspects of Minoan Foreign Relations, LMI–II," *MT*, 191–195; Bietak, *Avaris*, 81.
36. Manning, *Absolute Chronology*, App. 8, which revises the former LMII dates of c. 1510 to c. 1480/1450 or c. 1425 to c. 1390. Also, Mycenaean Late Helladic IIB is dated c. 1520/1480 to c. 1445/1415.
37. Manning, "Emergence of Divergence," 222, 249–251; W. D. Niemeier, "The character of the Knossian palace society in the second half of the fifteenth century B.C.: Mycenaean or Minoan?" *Minoan Society*, 217–236, and his "The End of the Minoan Thalassocracy," *MT*, 205–214.
38. M. R. Popham, "Late Minoan II to the End of the Bronze Age," *Knossos: A Labyrinth*, 89–102.
39. Stefan Hiller, "Pax Minoica versus Minoan Thalassocracy: Military Aspects of Minoan Culture," *MT*, 30, and Neimeier, "Character of the Knossian Society," 217–236; Nicholas Platon, *Zakros* (New York: Charles Scribner's Sons, 1971), 265–267. Cline, *Sailing the Wine Dark Sea*, 94, suggests the Egyptians may have assisted the Mycenaeans in the destruction of Knossos, possibly to eliminate Minoan trade middlemen or for an alliance against the Hittites and others. Among scholars who argue for a LMIII final destruction of Knossos is Peter Warren, *The Aegean Civilizations: from ancient Crete to Mycenae*, rev. ed. (Oxford: Phaidon, 1989), 4.
40. Manning, *Absolute Chronology*, App. 8, which revises the former starting date of c. 1390. LMIII is subdivided by archaeologists; according to Manning, the highly problematic start dates are LMIII-A1 c. 1435/1405, LMIII-A2 c. 1390/1370 (replacing c. 1370/60), and LMIII-B c. 1360/1325 (replacing c. 1340/1330). Most specialists agree on the end date, c. 1200 (except that the earlier dating includes a LMIIIC, c. 1190–c. 1070).
41. Dickinson, *Origins of Mycenaean Civilization*, 110. Even subsequent mainland Mycenaean architecture incorporated certain Minoan features. Dickinson, "'The Origins of Mycenaean Civilisation' Revisited," Robert Laffineur, ed., *Transition: Le Monde Égéen du Bronze Moyen au Bronze Récent* (*Aegaeum 3*) (Liège, Belgium: University of Liège, 1989), 131–132, believes that the mainland Greek centers of

power and wealth were not really towns, since they lacked monumental administrative and ceremonial complexes. Therefore the Mycenaeans did not constitute a true civilization but more of an organized "barbarian" society.

42. E. M. Melas, *The Islands of Karpathos, Saros, and Kasos in the Neolithic and Bronze Age* (Göteborg, Sweden: Paul Aströms, 1985), 162–163, 175–181. Examples where overseas Minoan colonist-settlers seem to have been allowed to remain undisturbed were Trianda on Rhodes and Miletus in western Anatolia. Christopher Mee, "Aegean Trade and Settlement in Anatolia in the Second Millennium B.C.," *Anatolian Studies*, vol. 28 (1978), 134–135, 149. The erection of probable Minoan religious sanctuaries on Cyprus is the strongest evidence for a colony. Vassos Karageorghis, "Some Reflections on the Relations between Cyprus and Crete during the Late Minoan IIIB Period," *Acts of the International Archaeological Symposium "The Relation Between Cyprus and Crete, ca. 2000–500 B.C."* (Nicosia: Department of Antiquities, Cyprus, 1979), xii, 199–203.

43. J. W. Shaw, "Bronze Age Harboursides," *Thera III*, I, 420–436; Avner Raban, "Minoan and Canaanite Harbors," *Thalassa* (*Aegaeum 7*), 129–146; Hara S. Georgiou, "A Sea Approach to Trade," *Wace and Blegen*, 360. Shaw (*Kommos I*, Part 1, 11; Part 2, 8, 13n9) has been unable to confirm local claims of a submerged wall connected to the reef at the harbor of Kommos.

44. Malcolm H. Wiener, "Trade and Rule in Palatial Crete," *Function of the Cretan Palaces*, 261–267, also Koepke, 255–259; Wiener in *Bronze Age Trade*, 325–340, also Peter Warren, "A Merchant Class in Bronze Age Crete?" 295–299, using the example of Ugarit, which left documentary records; Wiener in *Thera III*, I, 133–148. A. M. Snodgrass, "Bronze Age Exchange: A Minimalist Position," *Bronze Age Trade*, 73–75. Stylianos Alexiou, "Minoan Palaces as Centres of Trade and Manufacture," *Function of the Cretan Palaces*, 251–253, regarded "a developed Bourgeois class...hardly conceivable for Crete of the Bronze Age." Starr, *Influence of Sea Power on Ancient History*, argues that most sea trade in the ancient world was based on luxury items for aristocrats, except where some "urban agglomerations" like Classical Athens and Rome depended on imported grain which therefore necessitated "control of the seas."

45. Joseph W. Shaw, "A 'Palatial' Stoa at Kommos," *Function of the Cretan Palaces*, 101–109; Philip P. Betancourt, *Kommos II: The Final Neolithic through Middle Minoan Pottery* (Princeton: Princeton University Press, 1990), 41–48; Shaw and Shaw, *Kommos I*, Part 2, 244–248; I. Tzachili, "All Important Yet Elusive: Looking for Evidence of Cloth-Making at Akrotiri," *Thera III*, I, 380–389.

46. George F. Bass, "Evidence of Trade from Bronze Age Shipwrecks," *Bronze Age Trade*, 69–82. The crew from the Ulu Burun wreck seems to have been international rather than from a single polity.

47. Michael Wedde, "From Classification to Narrative: The Contribution of Iconography towards Writing a History of Early Aegean Shipbuilding," *Mediterranean Historical Review*, Vol. 11 (December 1996), courtesy of the author; Paul Johnstone, *The Sea-craft of Prehistory*, second ed. (London: Routledge, 1988), 67–69, 75–77; Lionel Casson, *Ships and Seamanship in the Ancient World*, rev. ed. (Princeton: Princeton University Press, 1971, 1986), 33–34, 41, figs. 34–48. Compare figs. 34–36, 47–48, and the largest ship of the Thera fresco — best reproduced in Christos Doumas, *The Wall-Paintings of Thera* (Athens: Thera Foundation, 1992), 71–74 — with the Eleventh and Twelfth Dynasty Egyptian ships depicted and reconstructed in Björn Landström, *Ships of the Pharaohs* (London: Allen and Unwin, 1970), 78–89, for possible Egyptian influences. An excellent compilation is Lucian Basch, *Le musée imaginaire de la marine antique* (Athens: Institut Hellénique pour la Préservation de la Tradition Nautique, 1987), especially 93–140 for the Minoans. Like Wedde, Basch argues that the Thera ships embodied naval design features originally built into earlier Cycladic vessels: "The Aegina Pirate Ships of c. B.C. 1700," *Mariner's Mirror*, vol. 72 (1986), 415–437. On Egyptian flax, see E. J. W. Barber, *Prehistoric Textiles* (Princeton: Princeton University Press, 1991), 11–15, also 344–345 for the suggestion that Aegeans may have exported boat parts to Egypt and Minoan style spiral designs for decorating deck shelters (*ikria*) on vessels beginning with Hatshepsut's reign in the early Eighteenth Dynasty.

48. For the context of the Thera ships (and troops ashore) see Lyvia Morgan, *The Miniature Wall Paintings of Thera* (New York: Cambridge University Press, 1988), 104–154. For the ships alone, see Basch, *Le musée imaginaire*, 117–132, and in *International Journal of Nautical Archaeology and Underwater Exploration* [hereinafter *IJNA*], Casson, "Bronze Age Ships: The evidence of the Thera Wall Paintings," vol. 4 (1975), 3–10; Shelley Wachsmann, "The Thera waterborne procession reconsidered," vol. 9 (1980), 287–295; and Heinz-Eberhardt Giesecke, "The Akrotiri ship fresco," vol. 12 (1983), 123–143. In *Mariner's Mirror*, vol. 64 (1978), see Clark G. Reynolds, "The Thera Ships," 124; Thomas C. Gillmer, "The Thera Ships — A Re-analysis," 125–133; and D. H. Kennedy, "A Further Note on the Thera Ships," 135–137; also Gillmer, "The Thera Ships as Sailing Vessels," and reply by Basch, vol. 71 (1985), 401–416. Also, Syridon Marinatos, the excavator of the mural, *Excavations at Thera VI* (Athens: n.p., 1974), 42–53, and letters to this author, Oct. 22, Nov. 25, 1972.

49. Hara S. Georgiou, "Bronze Age Ships and Rigging," *Thalassa* (*Aegaeum 7*), 61–71, plates XXI–XXIII,

also Owain T. P. Roberts, "The Development of the Brail into a Viable Sail Control for Aegean Boats of the Bronze Age," 55–60, Plates XVII–XX; Gillmer, "Thera Ships as Sailing Vessels," *Mariner's Mirror*, 42.

50. The ram is propounded in Avner Raban, "The Thera Ships: Another Interpretation," *American Journal of Archaeology*, vol. 88 (1984), 11–19, but rejected by most authorities cited in note 48 above. One interpretation of the scene is the celebration of a naval victory, with the paddlers as prisoners of war. A. F. Tilley and Paul Johnstone, "A Minoan naval triumph?" *IJNA*, vol. 5, no. 4 (1976), 285–292. Others suggest them to have been Libyan mercenaries obtained by Aegean ships plying the North African coast. Negbi, "Libyan Landscape," 89.
51. Casson, *Ships and Seamanship*, 30, 33n7, 35–36; Landström, *Ships of the Pharaohs*, 98, 107–109, 123–124; Wedde, "From Classification to Narrative." Queen Hatshepsut's trading galleys which traveled down the Red Sea to the land of Punt seem to have been developed from earlier Nile craft, although now with an "embryo keel" rather than a lower centerline timber. Gillmer, "Thera Ships as Sailing Vessels," 403–404.
52. Veronica McGeehan Liritzis, "Seafaring, craft and cultural contact in the Aegean during the third millennium BC," *IJNA*, vol. 17, no. 3 (1988), 238–239, fig. 2; Connie Lambrou-Phillipson, "Seafaring in the Bronze Age Mediterranean: The Parameters involved in Maritime Travel," *Thalassa (Aegaeum 7)*, 12; Georgiou, "Bronze Age Ships and Rigging," 70. Shaw, "Bronze Age Aegean Harboursides," 426, quotes Hesiod, *Works and Days* for the Classical Greek era: "Haul your ship up on the dry land and make an enclosure of stones about it...so the rains... will not rot the timbers..., and wait for the time to come when a voyage is in season."
53. McGeehan Liritzis, "Seafaring...in the Aegean," 240–243.
54. Homer, *Odyssey*, XIV, 254–260, describing voyages of later Mycenaean "curved ships."
55. Negbi, "Libyan Landscape," 90–94; Warren, "Minoan Crete and Pharaonic Egypt," 10–11; L. Vance Watrous, *Kommos III: The Late Bronze Age Pottery* (Princeton: Princeton University Press, 1992), 172–178. The port of Kommos, however, could be plagued by gale force north winds sweeping down from Mt. Ida to churn up the Bay of Mesara, but protected from south winds by the peninsula of Nisos. J. W. Shaw in *Kommos I*, Part 1, 5; Part 2, 8.
56. Hara S. Georgiou, "A Sea Approach to Trade in the Aegean Bronze Age," *Wace and Blegen*, 360–362.
57. J. N. Coldstream and G. L. Huxley, "The Minoans of Kythera," *MT*, 107–110; Georgiou, "A Sea Approach," 359–360.
58. J. B. Rutter and C. W. Zerner, "Early Hellado-Minoan Contacts," *MT*, 77–79.
59. Melas, *The Islands of Karpathos, Saros, and Kasos*, 154–162, 172–174; also Mario Benzi, "Evidence for a Middle Minoan Settlement on the Acropolis at Ialysos (Mt. Philerimos)," *MT*, 93–104. The coast of Anatolia is 70 km (42 mi) north of Cyprus.
60. This standard speed for the large longboats depicted on the "frying pan" shaped objects of mid-third millennium Syros and Keros is reckoned from the paddled boats of Pacific Oceania over the centuries. Cyprian Broodbank, "The Longboat and Society in the Cyclades in the Keros-Syros Culture," *American Journal of Archaeology*, vol. 93 (1989), 383–384.
61. Oliver Dickinson, *The Aegean Bronze Age* (New York: Cambridge University Press, 1994), 241–244; Rutter and Zerner, "Early Hellado-Minoan Contacts," 80–81.
62. Keith Branigan, "Minoan Colonialism," *Annual of the British School at Athens*, vol. 76 (1981), 23–33, categorizes three possible types of Minoan overseas colonies of the Neopalatial era — those governed by foreign leaders; settlers on unoccupied land; and an occupied region heavily influenced by immigrants or foreigners living in the midst of the natives (and Minoanizing them). See discussions of specific sites in *MT*. Jack L. Davis, "Minos and Dexithea: Crete and the Cyclades in the Later Bronze Age," Davis and John F. Cherry, eds., *Papers in Cycladic Prehistory* (Los Angeles: UCLA Institute of Archaeology, 1979), 143–157. Georgiou, "A Sea Approach," 363n38, argues that the western string hypothesis is not supported by any evidence, based as it is on modern ferry boat schedules.
63. R. W. Hutchinson, *Prehistoric Crete*, rev. ed. (Baltimore: Penguin, 1968), 101–102, equates such sea birds to homing pigeons, able to aid in navigating toward land, like Noah did in his ark. Michael W. Ovenden, "The Origins of the Constellations," *The Philosophical Journal*, vol. III (1966), 1–18. Though "inaccurate and primitive," this celestial navigation would have been "adequate for short journeys when the mariner is not far out of sight of land" or at least useful "simply to tell the seasons." (13–15). Ovenden's hypothesis has been expanded and supported by astronomer Archie E. Roy, "The Origin of the Constellations," *Vistas in Astronomy*, Vol. 27 (1984), 171–197, reviewing other authors and strongly suggesting that the Minoans drew on Mesopotamian astronomical knowledge. A comparative maritime people with acute celestial navigating skills were those of Pacific Oceania between 2500 BC and 700 AD. See Anthony Aveni, *Ancient Astronomers* (Washington: Smithsonian Institution, 1993), ch. 10 "The Voyaging Stars of Oceania," 148–161, and David Lewis, *We, the Navigators: The Ancient Art of Landfinding in the Pacific* (Honolulu: University of Hawaii Press, 1972).
64. Aveni, *Ancient Astronomers*, 152–153; Mary Blomberg and Göran Henriksson, "The archaeoastronomical results from the study of the Middle Minoan site on Petsophas," *Proceedings of the Fourth*

*"Oxford" International Conference on Archaeoastronomy, Stara Zagora, Bulgaria 1993* (in press), courtesy of the authors.

65. Aveni, *Ancient Astronomers*, 155–158. Christos Doumas suggests that cartography developed simply because the challenge of the sea may well have acted as "a motive force for more advanced thinking and scientific discoveries for the inhabitants of the prehistoric Aegean." "The Elements at Akrotiri," *Thera III*, I, 26–27.

66. Arthur Bernard Cook, *Zeus: A Study in Ancient Religion*, 2 vols. (1926; New York: Biblo and Tannen reprint, 1965), II, Part 1, 623–625, fig. 525; R. C. Bosanquet, "Excavations at Palaikastro. I," *Annual of the British School at Athens*, 8 (1901–02), 299–300; Stephanos A. Xanthoudides, "Ancient Molds from Sitea in Crete," *Ephemeris Archaiologike* (in Greek) (1900), 25–50, plates 1–4, who found the schist matrix of this and other molds near Palaikastro in the District of Sitia in 1899. The mold is 22½ cm (9 in) long, 10 cm (4 in) wide, 2 cm (¾ in) thick; the length of the large axe object is 12 cm (almost 5 in). Xanthoudides, 27–28, Pl. 3.

67. The role of the cardinal points and seasonal sunrise and sunset positions in the lives, religion, and cult practices of primitive, prehistoric, and ancient cultures was virtually universal. In addition to Aveni, *Ancient Astronomers*, see F. R. Hodson, ed., *The Place of Astronomy in the Ancient World* (London: Oxford University Press, 1974). For an explanation of "precession of the equinoxes," consult any encyclopedia. The star Thuban (alpha Draconis) was located less than ten minutes of arc from the celestial north pole about BC 2700 and "moved" very slowly away from it throughout the Bronze Age. A still useful introduction to solar rising and setting positions in antiquity is J. Norman Lockyer, *The Dawn of Astronomy* (1894; Cambridge, MA: MIT Press reprint, 1964), 51–57. Government charts of summer and winter Aegean Sea currents are reproduced in McGeehan Liritzis, "Seafaring...in the Aegean," 239–240, figs 1, 2.

68. Platon, "The Minoan Thalassocracy and the Golden Ring of Minos," *MT*, 67. Martin P. Nilsson, *The Minoan-Mycenaean Religion and its Survival in Greek Religion*, second rev. ed. (1950; New York: Biblo and Tannen reprint, n.d.), 398, saw "excellent reasons why the seafaring Minoans should have a goddess of Navigation, and the warlike Mycenaeans a goddess of war" but as separate deities whose attributes were too specialized to befit the Great Goddess. Axel W. Persson, *The Religion of Greece in Prehistoric Times* (Berkeley: University of California Press, 1942), 25; Stylianos Alexiou, *Minoan Civilization*, third rev. ed. (Heraclion, Crete: Spyros Alexiou Sons, c. 1977), 113–114.

69. Nilsson, *Minoan-Mycenaean Religion*, 624–629; Walter Burkert, *Greek Religion* (Cambridge, MA: Harvard University Press, 1985), 198–199. In Greek mythology, the Elysian Fields were the abode of Rhadamanthys, a son of Zeus and Europa and brother of Minos, with whom he spent most of his life on Crete, he as just lawgiver, Minos as king. For model boats, see Paul Forsythe Johnston, *Ship and Boat Models in Ancient Greece* (Annapolis: Naval Institute Press, 1985), 11–14. Nanno Marinatos, *Minoan Religion* (Columbia: University of South Carolina Press, 1993), 31, notes that despite its late, c. 1400, date (LMIII, Mycenaean), the Ayia Triada coffin (figs. 27–30) "seems to preserve the essence of Minoan ritual as it was established already in the Prepalatial period."

70. Arthur Evans, *The Palace of Minos at Knossos*, 4 vols. (1921–36; New York: Biblo and Tannen reprint, 1964) [hereinafter *PM*], Vol. IV, Part 2, 947–961; Marinatos, *Minoan Religion*, 163–164, figs. 150, 151, for nautical goddess seals and rings; Platon, "Minoan Thalassocracy," *MT*, 67–69, also reviewing earlier doubts about the authenticity of the Ring of Minos. Michael Wedde, "The Intellectual Stowaway: On the Movement of Ideas with Exchange Systems — A Minoan Case Study," R. Laffineur and P. P. Betancourt, eds., *TEXNH. Craftsmen, Craftswomen and Craftsmanship in the Aegean Bronze Age* (forthcoming, 1997), argues against any possible Egyptian inspiration for the Ring of Minos, including his belief that the depicted steering oar is actually a pole, a device not used in Cretan waters.

71. Costis Doumas, *Guide to Cretan Antiquities* (Park Ridge, NJ: Noyes Press, 1976), 171–172.

72. *CMS* (*Corpus der minoischen und mykenischen Siegel*) catalogue number II 1, 287 a, b. Paul Yule, *Early Cretan Seals: A Study of Chronology* (Mainz am Rhein, Germany: Philipp von Zabern, 1981), 12, 57, 165–166, 187, 195, 209–210, Plates 8 (11), 28 (Motif 52, 1); Evans, *PM*, Vol. I, 118–120, fig. 87, 7, 8. The depictions on two of the seal's three sides measure about 2.0 cm x 1.5 cm for the ship/fish motif, 2.0 cm diameter for the motif with a quadruped animal and what may be two stylized ships.

73. Evans, *PM*, Vol. I, 281–284; Nanno Marinatos and Robin Hägg. eds., *Sanctuaries and Cults in the Aegean Bronze Age* (Stockholm: Swedish Institute in Athens, 1981), 214; Lydia Morgan in *MT*, 139; Boulotis, "The Aegean Area," *Greece and the Sea*, 22, 28, 30, 32, 33, fig. 12; Marinatos, *Minoan Religion*, 156–157, 230–234, figs. 88, 139, 234–239, observing also, 28, that in primitive Borneo "the soul is sent to its final resting place in the sea, ...perhaps typical island mentality." She notes, however, 131–132, that the dolphin was often depicted as a predator. On the importance of water to the Aegeans, see C. Doumas, "The Elements at Akrotiri," *Thera III*, 1, 26–27.

74. John A. Sakellarakis, "Mason's Marks from Archanes," William C. Brice, ed., *Europa: Festschrift fllr Ernst Grumach* (Berlin: Walter de Gruyter, 1967), 277–288, which treats all locations of the marks, not

simply those at Arkhanes, a site some 10 km (6 mi) south of Knossos that is believed to have been a palace in its own right.

75. L. V. Watrous, "Cretan Relations with the Aegean in the Late Bronze Age," *Wace and Blegen*, 83–85; John Chadwick, *Linear B and Related Scripts*, 24, 27, 47, including the syllable as *re* in Linear B.

76. Burkert, *Greek Religion*, 17, 43–46, 136–139; John Chadwick, *The Mycenaean World* (New York: Cambridge University Press, 1976), 86–87. The Mycenaean spelling of the Greek Poseidon was Poseidaon or Poteidaon. The syllable *da* means "running water," hence its possible role in Poseidon's suzerainty over the sea. Also Boulotis, "The Aegean Area in Prehistoric Times," 26. Burkert, 42, emphasizes the fact that neither Zeus nor Poseidon had cult images or temples for a very long time.

77. Burkert, *Greek Religion*, 136–139, who also suggests that the storm at sea may have been Poseidon's epiphany (appearance); Robert Graves, *The Greek Myths* (Mt. Kisco, NY: Moyer Bell, 1960), in two sections, I, 17, 59, 148, 170, 188, including the myths and Graves' commentary. Zeus was born in a cave either on Mt. Ida or Mt. Dikta, the two highest peaks on Crete, and was worshiped at Mycenaean Phaistos as Zeus Welchanos. His elevation over the Great Goddess probably included his amalgamation with the Minoan Great Goddess' consort, name unknown but labeled by mythographers as the Cretan Zeus. Davaras, *Guide to Cretan Antiquities*, 148–149, 347; R. F. Willetts, *Cretan Cults and Festivals* (New York: Barnes and Noble, 1962), 79–92, 199–222, 231–251.

78. Graves, *Greek Myths*, I, 59, 143, 293, 324–325, 335–339, II, 118–119; Burkert, *Greek Religion*, 65, 136, 138, 221–222, 365, who notes (139) that the seafaring Odysseus became a priest of Poseidon. For possible links between Minoan, Mycenaean, and Greek sea and wind deities and mythology, including the famous voyage of the Mycenaean Argonauts, see Boulotis, "The Aegean Area in Prehistoric Times," 22–23, 25, 32. Willetts, *Cretan Cults*, 189.

79. Janice L. Crowley, "Patterns in the Sea: Insight into the Artistic Vision of the Aegeans," *Thalassa (Aegaeum 7)*, 219–230, Plates LIX–LX, although she is loath to separate Minoan and Mycenaean art, a position with which I cannot agree in view of the general Minoanization of Mycenaean culture, especially art forms.

Northwest Historical Series, XVIII

# Fur Traders From New England
## The Boston Men in the North Pacific, 1787–1800

The Narratives of William Dane Phelps, William Sturgis and James Gilchrist Swan

Edited with notes and introduction by

Briton C. Busch
and
Barry M. Gough

*If ever a tougher breed of sea traders existed in modern human history is doubtful. The "solid men of Boston," as Phelps terms them, conducted an annual voyage around the world. They doubled Cape Horn, reputedly the world's most hazardous passage, without the loss of a single ship."*
— Barry M. Gough

This is a finely crafted book of 137 pages, containing a historical introduction, appendices, notes, charts, bibliography and index. Printed on acid free paper, cloth bound, it is designed to match other volumes in the series. Issued in an edition strictly limited to 750 copies. ISBN 0-87062-261-7. $29.50.

Send orders to: The V. Arthur H. Clark Company, PO Box 14707, Spokane, WA 99214. Telephone: (800) 842-9286. E-mail: clarkdks@soar.com. Washington State customers please add 8.1% sales tax. Shipping and handling fee of $3.00 will be waived if a check accompanies your order.

**Boston Men**: The term was used generically by native peoples for years to refer to any American trading furs in the Pacific Northwest. Why? Because the first Americans to engage in fur trading on the North Pacific Coast were all from Boston — pioneers in the trade long before the overland westward migrations.

# Frank Thomas Bullen, 1857–1915: Whaling and Nonfiction Maritime Writing

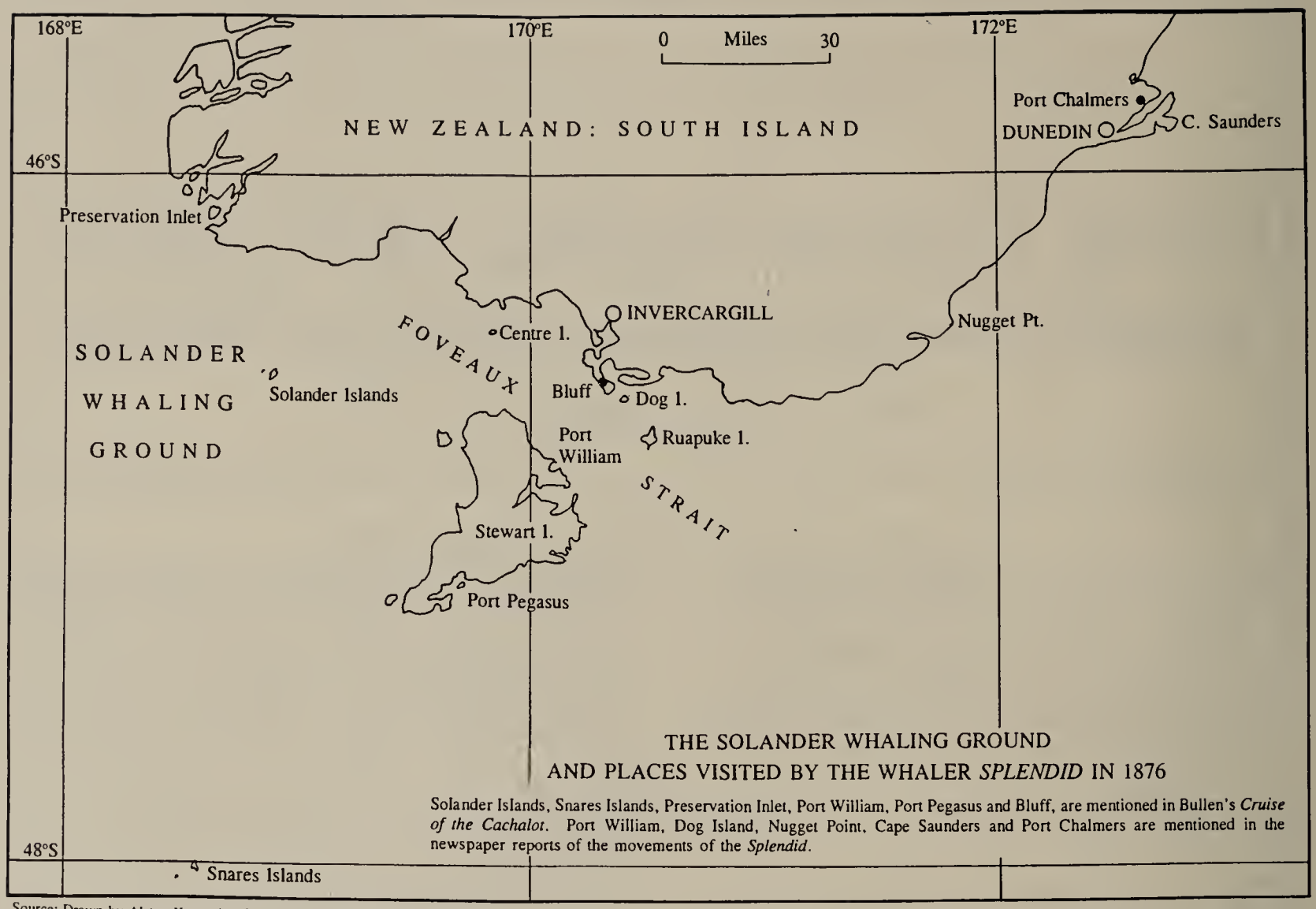
ALSTON KENNERLEY

*It is immense...I have never read anything that equals it in its deep-sea wonder and mystery; nor do I think that any book before has so completely covered the whole business of whale-fishing and at the same time given such real and new sea pictures.*[1]

Rudyard Kipling's enthusiastic letter to Frank Thomas Bullen in 1898 just before the publication of the *Cruise of the "Cachalot"* was the first of many such comments, opinions justified by the number of reprints and new editions, the most recent in 1980. Yet, in the wider world of English literary awareness and criticism, Bullen's writings have not made their mark. In academic libraries, he does not appear alongside the shelves of books devoted to those maritime authors such as Melville or Conrad, counted among the great writers whose writings are accorded the label "literature." One is hard-pressed to find any commentary on Bullen's life or his writings, although he has recently been included in the *Dictionary of National Biography*.[2] Maritime historians are much more aware of his main publications, and he is certainly not ignored by specialists in maritime literature, as he is represented in two recent anthologies of maritime writing.[3]

While Bullen might be judged a minor writer in the literary context, his work may have a higher status in the context of maritime history. Adhering to the standards of historical method, the maritime historian works as much as possible with primary sources, such as those found in archives. Augmentation comes, for example, from the results of nautical archaeology and from the interpretations of other maritime historians, but such sources do not necessarily provide the fullest insights. The passage of time submerges the past, particularly the basic, the commonplace, and the mundane. The answers to questions such as "How was it made?", "How was it done?", "What did it feel like?", may be

Frank T. Bullen. From *With Christ in Sailor Town: What the Seamen's Mission is Doing* (London: Hodder & Stoughton, 1901), frontispiece.




THE SOLANDER WHALING GROUND
AND PLACES VISITED BY THE WHALER *SPLENDID* IN 1876

Solander Islands, Snares Islands, Preservation Inlet, Port William, Port Pegasus and Bluff, are mentioned in Bullen's *Cruise of the Cachalot*. Port William, Dog Island, Nugget Point, Cape Saunders and Port Chalmers are mentioned in the newspaper reports of the movements of the *Splendid*.

Source: Drawn by Alston Kennerley, based on hydrographic charts of the area.

The Solander Whaling Ground and places visited by the whaler *Splendid* in 1876. Map by Alston Kennerley.

lost, leading to distorted interpretations. This is where the writings of maritime authors such as Bullen, both factual and fictional, come into their own. Their work was often based on personal experience, and at their best can be considered a primary source, although the question of reliability always remains at the back of the historian's mind.

Whaling had a special primacy for Frank Thomas Bullen. Not only was it the subject for his first book, but also the subject of a number of articles and short stories, and a topic to which he returned time and again. His earliest identified published work, *A Day on the Solander Whaling Ground* (1894), addressed whaling. By the time *Cachalot* appeared, at least six other articles had been published on the same theme. In all, he wrote at least twenty articles, short stories, and chapters on different aspects of whaling, the latest being three stories published in 1913. Of his novels, at least two, *A Whaleman's Wife* and *A Bounty Boy*, had whaling themes.[4]

Bullen's experience as a whaler began at the age of eighteen, and clearly influenced his writing. *Cachalot* was written in the first person with a clarity and freshness of style. His writing was also supported by extensive reading. As a thirteen-year-old, he devoted a three-week's stay in the Liverpool Sailor's Home to reading the contents of its library. After 1882, working and living in London, he took full advantage of his easy access to all kinds of publications. In the preface of *Cachalot*, he discussed books on whaling, and in *Creatures of the Sea* all the species he wrote about were accorded their scientific names. In the latter work, he also acknowledged Herman Melville's *Moby Dick* — a curious omission from his preface in *Cachalot*, given the similarities between the two voyages.[5]

Bullen later adopted the role of apologist and popularizer of merchant shipping and seafaring

in his articles in the *Morning Leader*. It was a role he developed in *Men of the Merchant Service* and *Our Heritage the Sea*. In the preface to *Cachalot*, he wrote:

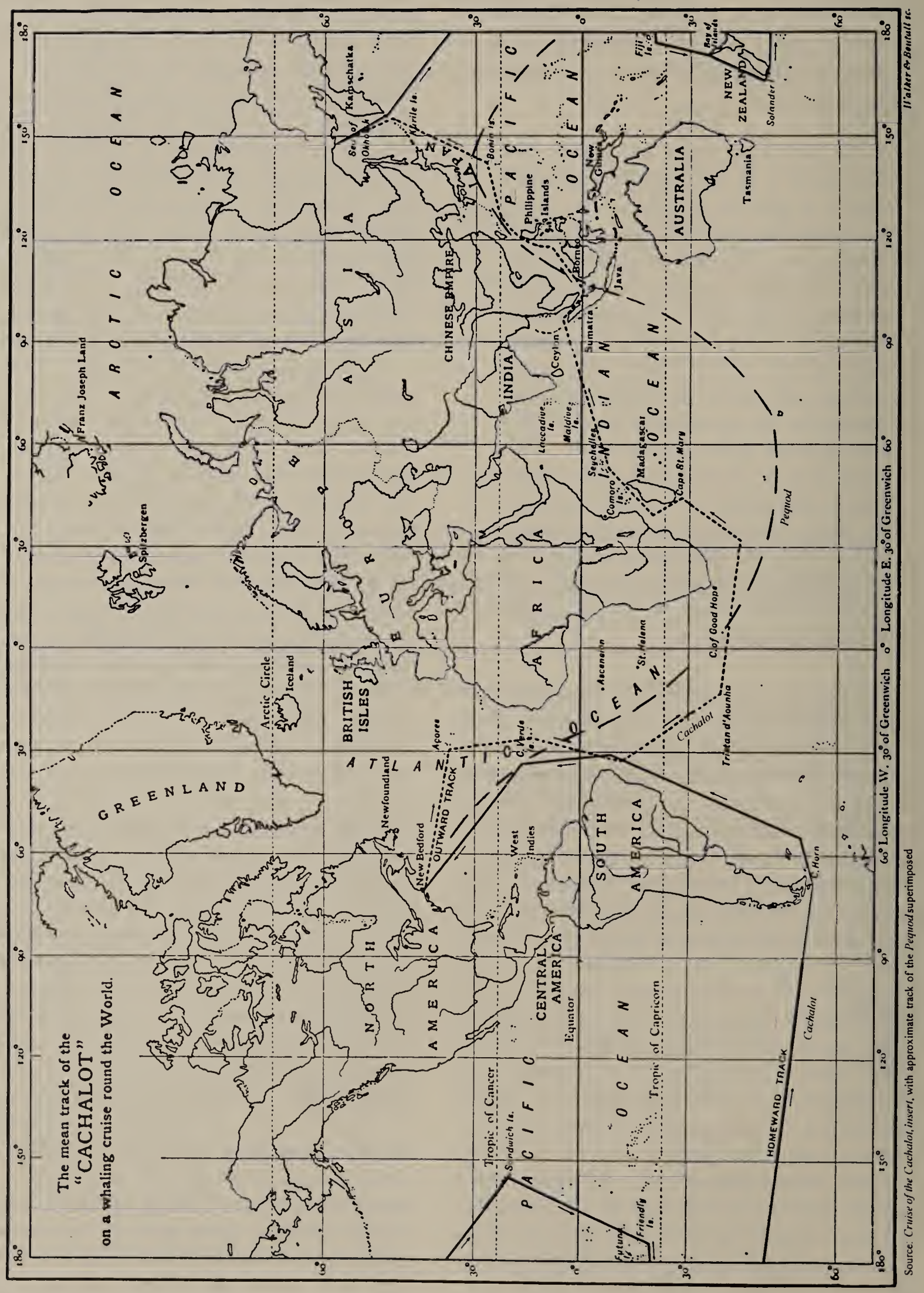
> *In the following pages an attempt has been made — it is believed for the first time — to give an account of the cruise of a South Sea whaler from the seamen's standpoint.... Its aim is to present to the general reader a simple account of the methods employed, and the dangers met with, in a calling about which the great mass of the public knows absolutely nothing...the author has endeavoured to summarise his experiences so that they may be read without weariness.... One claim may be made with perfect confidence...the matter is entirely trustworthy, being compiled from actual observation and experience, and in no case at second-hand...the object not being simply the making of a book, but the record of little-known facts.*

Did this very strong claim to personal authority contain a veiled criticism of *Moby Dick* with its complex psychology and abrupt changes of style? It is hard to believe that Bullen was not thoroughly conversant with Melville's epic before he published *Cachalot*. Indeed, there are certain similarities between the two works which at one extreme may be considered simply coincidental and at the other might even be construed as a reworking of the earlier book.[6]

There is the question of the true identity of the ship and voyage which Bullen represents as *Cachalot*. Suspicion has long existed that she was the *Splendid,* but positive proof seems to have eluded earlier enquirers. However, the ship's identity has always been available. Bullen named her as the *Splendid* in the first sentence of "A Day on the Solander Whaling Ground" in 1894 and again in 1899 when that article was reprinted in *Idylls of the Sea*. While the ultimate confirmation in the crew agreement for the voyage in question or in Bullen's discharge certificates has not as yet been found, he did name the *Splendid* in his examination application for second mate — for which he must have produced certificates of discharge — and again for first mate. In addition, *Splendid* was named as Bullen's last ship when he signed on the *West York* in Dunedin, New Zealand, on 11 September 1876. His examination applications show that he served on *Splendid* between 13 May 1875 and 13 June 1876. This period probably encompassed two shorter voyages, of eight and five months, both starting and finishing in Dunedin/Port Chalmers.

*Splendid* was entered outwards on 14 May 1875, returning on 28 February 1876. She sailed again on 10 March 1876, returning on 5 June. Indeed, local newspaper reports suggest that *Splendid* devoted a significant part of this time to the Solander ground just off the southwestern corner of South Island, New Zealand.[7] In contrast, Bullen made *Cachalot* an American ship out of New Bedford, where the voyage started and ended. He even provided a map to illustrate the round-the-world route. Melville, on the other hand, set his much more elaborate engagement cycle in New Bedford, although the *Pequod* actually sailed from Nantucket and the voyage ended in disaster.

Bullen did have experience of service in an American ship, having sailed aboard a vessel he named as the *Pharos* of Boston, from London to Melbourne in 1873. There was no evidence that he visited the East Coast of the United States during his time at sea, though he did find himself in Nova Scotia and St John's (NB). He may have visited New Bedford only after *Cachalot* was published, and there wrote the preface to *Deep Sea Plunderings* during a 1901 lecture tour of the United States.[8] While the reasons for the change of setting remain a matter for speculation, the absence of dates in *Cachalot* and the vagueness of the locations of some of the incidents Bullen described make it quite possible to accept the authenticity of the detail. It might even be reasonable to assert that this adaptation has value for the historian for the insights provided as




Source: *Cruise of the Cachalot*, insert, with approximate track of the *Pequod* superimposed

"The Mean Track of the *Cachalot* on a Whaling Cruise Round the World." *Cruise of the "Cachalot"* (1898), insert.

informed fiction.

Whether or not Bullen modeled his story on *Moby Dick*, the literary status accorded to Melville's work invites comparison. Given a common port of departure, all Atlantic-based South Sea whalers faced a long outward passage and a choice between the Atlantic/Cape Horn route against the westerly winds and the Atlantic/Cape of Good Hope/Indian Ocean route into the Pacific Ocean. As with all marine hunting, knowledge of hunting grounds, local information, and successful catches, balanced against the elements and durability (water, food, maintenance) dictated the actual route taken.

Thus, it was hardly surprising that both *Pequod* and *Cachalot* rounded the Cape of Good Hope. *Cachalot* passed through the Mozambique Channel, past the Seychelles and some of the other Indian Ocean island groups, and entered the South China Sea via the Malacca Straits. *Pequod* steered east from the Cape to the Crossets group, then northeastward into the Java Sea via the Sunda Strait and the waters of the East Indies, aiming for the season off the coasts of Japan. *Cachalot* also caught whales in Japanese waters and penetrated the Sea of Okhotsk before heading southeast to the Sandwich Islands. *Pequod* took a similar route for the equatorial season and the final, frenetic encounter between Captain Ahab and the white whale. *Cachalot* continued south of the Equator to the Friendly Islands, then past Fiji and west of New Zealand to the Solander Grounds off Stewart Island (NZ). Fully laden, she returned via Cape Horn to New Bedford. A study of South Sea whalers' logs would no doubt reveal many similar round-the-world voyages; it would be dangerous to read anything into the similarities between these two voyage patterns.

There were several descriptions in both *Cachalot* and *Moby Dick* of whale chases and captures, but as neither author was interested in the totality of such events or in providing any answers to the questions business historians

"Firing a Bomb-Lance." *Cruise of the "Cachalot"* (1898), 119.

"Lancing a Whale." *Cruise of the "Cachalot"* (1898), 39.

might raise, only general patterns can be noted. Both ships caught their first whales in the Atlantic Ocean, but this seems to be an isolated success. For both ships, the Indian Ocean proved more fruitful, while there appeared to be reasonable success on each of the locations in the Pacific Ocean.

A closer comparison is possible of particular chase descriptions. Bullen's boat was already fast to a whale which broke surface some distance off, and they were hauling up to lance it when another whale surfaced close to his boat:

> *The sight of that whale at liberty, and calmly taking stock of us like that, was too much for the mate. He lifted his lance and hurled it at the visitor, in whose broad flank it sank, like a knife into butter, right up to the pole hitches. The recipient disappeared like a flash, but before one had time to think, there was an awful crash beneath us, and the mate shot up into the air like a bomb from a mortar. He came down in a sitting posture on the mast-thwart; but as he fell, the whole framework of the boat collapsed like a derelict umbrella. Louis quietly chopped the line and severed our connection with the other whale, while in accordance with our instructions we drew each man his oar across and lashed it firmly down with a piece of line spliced to each thwart for the purpose. This simple operation took but a minute but before it was completed we were all up to our necks in the sea.* (*Cachalot*, 40–1).

In Melville's first chase, the boats were under oar and sail, racing after a school of whales with a squall rushing down on them:

> *"That's his hump. There, there, give it to him!" whispered Starbuck. A short rush-*

*ing sound leapt out of the boat; it was the darted iron of Qeequeg. Then all in one welded commotion came an invisible push from astern, while forward the boat seemed striking on a ledge; the sail collapsed and exploded; a gush of scalding vapor shot up near by; something rolled and tumbled like an earthquake beneath us. The whole crew were half suffocated as they were tossed helter skelter into the white curdling cream of the squall. Squall, whale, and harpoon had all blended together; and the whale, merely grazed by the iron, escaped. Though completely swamped, the boat was nearly unharmed. Swimming round it we picked up the floating oars, and lashing them across the gunwale, tumbled back to our places. There we sat up to our knees in the sea, the water covering every rib and plank, so that to our downward gazing eyes the suspended craft seemed a coral boat grown up to us from the bottom of the ocean.* (*Moby Dick*, 230–1)

Predictably, both authors treated all the various activities which took place on whalers: the crew, the master and mates, the treatment of the crew, lookout, launching boats, chasing, catching, the flurry, accidents, stripping the carcass, processing the blubber and by products, the try works, other sea creatures (notably the giant squid), gamming (chatting to other whalers), storms, and other incidents aboard ship. The death throes of a whale were described:

> *Then I saw, at a little distance, the whale lying quietly. As I looked he spouted, and the vapour was red with his blood. "Starn all!" again cried our chief, and we retreated to a considerable distance. The old warrior's practised eye had detected the coming climax of our efforts, the dying agony or "flurry" of the great mammal. Turning upon his side, he began to move in a circular direction, slowly at first, then faster and faster, until he was rushing round at a tremendous speed, his great head raised quite out of the water at times, clashing his enormous jaws. Torrents of blood poured from his spout hole, accompanied by hoarse bellowings, as of some gigantic bull, but really caused by the labouring breath trying to pass through the clogged air passages. The utmost caution and manipulation of the boat was necessary to avoid his maddened rush, but this gigantic energy was short lived. In a few moments he subsided slowly in death, his mighty body reclined on one side, the fin uppermost waving limply as he rolled to the swell, while the small waves broke gently over the carcass in a low, monotonous surf, intensifying the profound silence that had succeeded the tumult of our conflict with the late monarch of the deep.* (*Cachalot*, 76)

> *"Pull up! — close to!" and the boat ranged alongside the fish's flank. When reaching far over the bow, Stubb slowly churned his long lance into the fish.... And now it is struck; for, starting from his trance into that unspeakable thing called his "flurry," the monster horribly wallowed in his blood, overwrapped himself in impenetrable, mad, boiling spray, so that the imperilled craft, instantly dropping astern, had much ado blindly to struggle out from that phrenzied twilight into the clear air of the day. And now abating in his flurry, the whale once more rolled out into view; surging from side to side; spasmodically dilating and contracting his spout hole, with sharp, cracking, agonized respirations. At last gush after gush of clotted red gore, as if it had been the purple of red wine, shot into the frightened air; and falling back again, ran dripping down his motionless flanks into the sea. His heart had burst!* (*Moby Dick*, 295–6)

While one might expect to find parallels between *Cachalot* and *Moby Dick*, less to be expected was the discussion in both works of

English involvement in whaling in the eighteenth century. Bullen included a note in his introduction of the operations of the London firm Enderby, which, though in less detail, appeared to be very similar to a discussion offered by Melville in Chapter 101.

Parallels between some of Bullen's short pieces on whaling and episodes in *Moby Dick* also exist. Such similarities are to be expected, and tales of dramatic whaling incidents were common property amongst those experienced in the industry. In "The Debt of the Whale," Bullen built a tale around Elisha Cushing's obsession to catch a particular white spotted whale, culminating, beyond all reason, in a series of chases, and at the end, in the death of Cushing in the final battle with the whale.[9] It is difficult to avoid the similarity with the main theme of *Moby Dick.*

If, as seems to be the case, Bullen provided a linking narrative to a series of episodes about whaling, it might be expected that some of his short pieces on the subject might find a place in the more substantial work, and that there might be other aspects of *Cachalot* which point in the direction of a compilation. Chapter Eight, "Abner's Whale", has its precursor in "Abner's Whale: A Story," and Chapter Fifteen, "On the Solander Grounds" in the article noted above.[10] A final point about *Cruise of the Cachalot*: the chapters in the latter part of the book concerned with the Pacific and New Zealand waters have a strength of detail less apparent in the earlier sequences, good though they are. This is also true of his descriptions in *A Bounty Boy*, in which all the whaling episodes are set in the Pacific Ocean.

Everyone carries a baggage of past experiences which influence current behaviors, although it is more obvious on some than on others. Of these layers of social conditioning, those from childhood and early work experience are often the most deeply ingrained. Seafaring experience marks a person particularly heavily. It is by no means unusual for authors of fictional works subconsciously as well as deliberately to draw upon their backgrounds in developing plots or episodes in their writing. Bullen was an unashamedly autobiographical author, and his output demands an awareness of the general lines of his career. His childhood and seagoing experiences were extremely powerful, and his record of them a wonder in themselves.

By far, the most important sources are his own writings, particularly the overtly autobiographical books, *Confessions of a Tradesman, Log of a Sea Waif, Cruise of the Cachalot* (if it is accepted), *With Christ at Sea,* and *Recollections.*[11] In addition, almost all of his nonfiction was drawn from personal experience, and much of his fiction contain episodes where personal experience may be identified. An extreme case is *Men of the Merchant Service*, with over forty examples drawn from his seafaring days. This is true also of his essays in marine science.

The difficulty with these sources is that Bullen chose his examples to illustrate particular themes; he was not concerned with setting the episodes at a particular point in his career at sea. There were almost no dates in his output, and other indications of a particular time, such as ship's names or external events, were often omitted or concealed. In his short story "The Chums," he recorded his service in 1877/78 in the barque *Dartmouth* and his passing the second mate's examination in London at the end of the voyage perfectly accurately, but named his next ship as the barque *Magellan*, when in fact he served in the *Columbus*.[12] In the use of substitute names, Bullen sometimes left a clue to the real name, such as replacing *Columbus* with *Magellan*. In *Cachalot*, the second master — formerly the mate — is Captain Count; on the *Splendid*, the master for the second of Bullen's voyages was Captain Earle.

His examination applications provided details of some of his sea service, while the service ledgers of the Registrar General of Shipping and Seamen provide even more, but there are gaps in these records caused by lack of legal engagement, shipwreck, and desertion which still left some of the chronological sequence in doubt. The crew agreements which Bullen signed for nine of the perhaps twenty-four ships in which he served provided addi-

tional confirmation of part of his sea service. With the usual data from baptismal, marriage, and census records, these constituted the only external sources currently available. Further work on crew agreements and official log books may augment the voyage details.[13]

Frank Thomas Bullen's life fell into a number of clear divisions: his early childhood, three years as a "street Arab," fourteen years at sea, sixteen years as a meteorological office clerk and part-time tradesman, and seventeen years as a full time writer/lecturer. Three of his books were devoted to his sea life. *Log of a Sea Waif* chronicled his time as a boy at sea, 1869 to 1874. In *With Christ at Sea*, with its religious objective, he returned to this period before following his time at sea to its conclusion, but lacked the same detail and drama as *Sea Waif*. *With Christ at Sea* and *Recollections* also told of his early childhood, and *Confessions of a Tradesman* covered the periods on either side of the period at sea. *Recollections*, his last book, was mainly concerned with his lecturing experiences. Bullen's own writings gave few insights into his writing career, and they were very restrained about his family life, social connections, and relaxations.

Frank Thomas Bullen was born on 5 April 1857 to Frank Robert Bullen, a stonemason, and his wife Margaret. The 1861 census showed an extended working class family sharing a small terraced house in Paddington, London. This comprised his grandfather, John Bullen, a widower and doorkeeper aged 61, his aunt, M. A. Bullen, an unmarried dressmaker aged 40, another unmarried aunt, Kathy Bullen, aged 30, an unmarried uncle, Edwin Bullen, a dairyman aged 27, his father Frank, aged 25, and, of course, Bullen himself, aged four. His mother was not listed.

Bullen used the word "precocious" to describe himself in connection with his early ability and enjoyment of reading, and the facility with which he memorized the hymns and anthems sung at the Church of England Lock Chapel, Paddington, which he attended until the age of nine. His mother deserted him when he was eighteen months old, his father not long after. His aunt had him baptized at Holy Trinity Church, Paddington, on 28 June 1863. He led a cloistered existence with his dressmaker aunt, who sustained him and sundry other relatives until her death in 1866, when he was thrown on the streets.

Bullen's formal education was limited to a period in a dame school and the chapel Sunday school. There are indications that some of his relatives remained in that part of London, and it was atypical of relationships amongst the poor that no one appeared to have provided some kind of home for him. Instead, he begged odd jobs for his keep, living rough if nothing better offered. He obviously had some idea where relatives lived, as he ended this period by shipping as a cabin boy in 1869 on a ship commanded by an uncle.

The abrupt change from total care to homeless waif made Bullen's survival all the more remarkable. His record is a valuable contribution to the social history of the poor, revealing the iniquity of child labor, and treatment that could be kindly or callous. He found himself numerous temporary jobs, often as errand boy, for a laundry, and then for an oil shop. For the latter, he was once sent from Paddington to Shoreditch with his railway fare from Westbourne Park to Moorgate to fetch a drum of treacle which turned out to be too heavy for him to lift. It took all day for him to roll it to the station, then from the train to the shop — only to be told off for taking so long. Other jobs were found with a trunk maker, on a milk round, with a lath maker, a cobbler, a paper pattern maker, a chemist, as a billiard marker in a pub, and on a building site.

Bullen knew where to find the best scraps of food, including when the cook shops were about to clean out their soup tanks of their remains, a thick puree. He learned the tricks of survival which stood him well at sea, a move made in an attempt to achieve some stability in his existence.

Experience in the merchant service dominated Bullen's writing, but for the historian seeking a balanced view of sea life in the latter

part of the nineteenth century, it must be considered flawed because Bullen had very little experience of steam ships — perhaps a year on Australian coastal steamers. By 1880, when he was still serving, British registered steamships comprised 21% of the total number, and 41% of the tonnage. By the time he was established as a writer, the steam proportions were respectively 45% and 75%.

His service in sail was varied, ranging from the nearly new Anderson steel-built ship *Harbinger* in 1879 to the ancient wooden *Keepsake* in 1880, from the coffin ship *Arabella* in 1869 to an unnamed slaving schooner in 1879, and from the American ship *Pharos* in 1873 to the New Zealand Shipping Company vessel *Rangitiki* in 1875. He undoubtedly experienced the best and the worst the shipping industry operated.

Whether Bullen found the stability he desired when he took to the sea, must be in serious doubt. His first passage was a miserable experience, as he was harshly treated by the master, his uncle. Of the ship he writes:

> *The rigging was dropping to pieces; so that a man never knew, when he went aloft, whether he would not come crashing down by the run, from the parting of a rotten footrope or a perished seizing. The sails were but rags, worn almost to the thinness of muslin, every flap threatening to strip them from the yards. There was no material for repairs, no new rope, canvass, or "seizing stuff"; half a barrel of Stockholm tar, and a few pieces of old "junk" for sennit and spunyarn, representing all the boatswain's stores. In fact, the absence of all those necessaries...was a never failing theme of discussion in the folksle. And one conclusion was invariably arrived at... that the Arabella was never intended to return.* (*Sea Waif*, 19)

His one pleasure at that time was observing sea life. It became an abiding interest and provided a clue to his writing on marine life, including whales.

Bullen's short-lived "stability" disappeared once the ship was in the West Indies. His uncle transferred him to a "safer" ship — which promptly ran aground, becoming a total loss. Rescue from the coral reef led to a period in Havana under the British Consul as a DBS (distressed British seaman), during which time he survived a yellow fever epidemic and experienced a hurricane before being shipped, eventually reaching Liverpool.

By the age of thirteen, he had survived another shipwreck, another yellow fever epidemic, and two serious bouts of illness. Between voyages, he reverted to his "street Arab' existence while seeking ships, once finding work with a Liverpool figure head carver. Bullen took six years to achieve the rating as AB (on the *Splendid* in 1875), passing the second mate's examination in 1878 and the first mate's in 1880. It was not easy to obtain mate's jobs in England, and more than once he was forced to ship as AB.

Bullen's sea career displayed all the features which ashore seemed to typify seamen: frequent changes of ship, desertion, taking odd jobs ashore overseas, and unexplained gaps in his record of discharges. He usually has a good explanation. For example, on two occasions he had shipped as AB in London, and overseas he was offered the chance (which he took) of berths as second mate, but the condition of his release was that he forewent his balance of earnings.

It is important to note the place of religion in Frank Bullen's life. After several years in mainly "Godless" ships, he underwent a conversion experience and confirmation in New Zealand just before his whaling voyage. Thereafter he maintained his beliefs, although privately on some ships. On the *Herat* in 1879, a ship on which the master had lost all authority, the crew "sent him to Coventry" because his "raising the tune" at a burial service marked him out.

It is a truism that seafarers must leave the sea, that most did so by their early thirties, and that the urge to settle down played a part. Bullen fitted this model well. When he

came ashore in 1882, he had some fourteen years' service, but was still young, being then twenty-four years old. He had a young wife, Amelia Grimwood, a minor he married at St. Marylebone Church, London, on 1 September 1879. She was the daughter of Voltaire Lucifer Grimwood, a shoemaker (deceased). The relative instability of seagoing was replaced by a new instability, that of trying to set up a home and support a family on a clerk's wages. That Bullen had a mate's certificate, was Godfearing, and knowledgeable about the weather, seems likely to have played a part in obtaining his job as a clerk at the Meteorological Office, which by that time had been operating nearly twenty years.

At two pounds per week, the work paid nearly one and a half times the amount he might have earned as a mate at sea. Although he stuck at it for a long time because of the steady — if modest — income it provided, Bullen thoroughly disliked his experience in the Meteorological Office. There he encountered the petty tyranny of senior clerks over their juniors, the demand for absolute conformity, the denial of any initiative, and the total lack of any variety. His unhappiness was hardly surprising. Despite the peculiarities of shipmates and the total nature of shipboard culture, there was considerable variety, and the dangers of the sea called for initiative and leadership, particularly in his recent years as a mate. Bullen alluded only briefly to the work in his books, always negatively. He was much more concerned to treat this period through his attempts to enhance his income, a need which arose from his desire to provide his family with a higher standard than when he was at sea. Like most seafarers, he was ill experienced in household matters or the ways and problems of small businessmen. The Bullens had four children, three girls and a boy, but the boy died young.

Bullen seems to have carried debt almost from the time he left the sea, for his furniture or his rent, and — once he had set himself up as a small tradesman — for his materials. His description of his trading ventures emphasized the mainly downward trend of his fortunes, small successes being more than countered by subsequent setbacks. As his supplementary activity grew, so he overfilled his out-of-office hours, progressively wearing himself out. He took in lodgers and tried door-to-door selling, both without much financial success. As a picture framer, after early disasters, he fared a little better. His largest venture was to take a shop jointly with his wife, an emporium for fancy goods, needlework, art and picture framing. The business gradually failed. He had his first court experience when he was summoned for the payment of medical bills. Sitting as an artist's model for the man who was later to illustrate his books brought a little extra income at this time.

By then, he was taking barely four hours rest each night, and he collapsed with heart failure one morning walking to the office. Eventually, he filed for bankruptcy, and fled with his furniture from his shop and the landlord. His short stories were beginning to bring some return, and in due course he repaid all debts and obtained his discharge.

Even so, he had to build his reputation. He felt that he was underpaid at £1 7s 6d ($2) for a 4,000 word essay accepted by a scientific journal. Bullen placed the start of his success with the acceptance of his article "Some Incidents of the Sperm Whale Fishery" (1897) after several rejections.[14] The magazine's publishers also expressed interest in *Cachalot*, which was half finished, and in due course paid him £100 for it.

Despite his difficulties, Bullen maintained his religious convictions, becoming a successful street-corner preacher and a leader in a local mission chapel. It seems likely that the story of the founding of a chapel in *The Apostles of the South East* had its roots in this period.[15] Certainly, Bullen honed his ability to hold an audience, and his preaching must be seen as a preparation for his lecturing career.

The growing success of his writing culminated in his appointment as columnist on the *Morning Leader*, which enabled him to resign from the Meteorological Office. He soon had a literary agent and a lecture agent, and from 1899,

Frank Bullen (seated in the first row, far right), with the Reverend David Roe and workers of the Seamen's Mission. *With Christ in Sailor Town: What the Seamen's Mission is Doing* (London: Hodder & Stoughton, 1901), 104.

writing and lecturing brought him a good income and allowed him some of the fruits of success, such as a house in the country. *Recollections* dealt largely with Bullen's lecturing experiences, with excellent insights into rail travel to obscure corners of Britain as well as into the travails of the paid public lecturer.

Before the spread of the cinema, lantern slide lectures were a very popular form of public entertainment. His success soon had him commanding sizable fees on the order of twenty guineas. It led to invitations abroad, journeys which produced his travel books. Bullen was much in demand, and certainly mixing in a wider range of society, but he now was able to pick and choose his commitments.

After years of rented accommodation, Bullen could move up the housing ladder, eventually moving to a country property in Cambridgeshire, and finally settling in Bournmouth, living apart from his wife. His health had been declining for some years owing to respiratory problems. He died on 25 February 1915, aged 57, on a visit to Madeira, where he is buried.

At the time Bullen discovered that he could write a good story for popular consumption, there was a growing appetite for recreational reading across an increasingly wide spectrum of the population. As well as daily papers, there was a wide range of inexpensive weekly and monthly magazines catering to this demand. In particular, the growing knowledge of the world fueled by the reports of Victorian explorers, created an appetite for stories based in exotic locations abroad. Bullen's seagoing experiences provided him with the material, while his innate ability and the depth of his reading enabled him to deliver pieces attrac-

tive in style and length to the editors of these publications. He was already writing before his bankruptcy, in slack periods in his shop, and he may already have been working on *Cachalot* at that time.

It was his appointment as columnist on the *Morning Leader,* freeing him from the Meteorological Office, that gave him the time to increase his output. Almost all his thirty-six books ran to 100,000 words, and two or three were published each year in the final period of his life. In addition, he maintained a steady flow of articles for the popular journals (*Cornhill Magazine*, *Spectator*, *Good Words*, *Sunday Magazine*, *Chambers Journa*l, *Country Life*, *National Review*, and *Pall Mall Gazette*). How long he sustained his biweekly column for the *Morning Leader* has yet to be ascertained, but it is certain his magazine writing continued at least until 1906. He was also becoming known in the United States because some of his pieces appeared in the *Eclectic Magazine*, *Littell's Living Age* and *Century*. All the articles related to Frank Bullen's sea experiences, and several stories were reworked. At least six of his books were compilations of these stories, again in a form which would appeal to his readership.

Bullen as the apologist for merchant seafaring took an approach that cropped up in many of his sea stories. He used some of his columns in the *Morning Leader* to publicize the neglect of seafaring, but pursued the role of apologist more fully in *Men of the Merchant Service* and *Our Heritage the Sea* with the purpose of making the general public more aware of seafarers and the importance of the shipping industry to Britain. The former was well received by the critics and its value is confirmed by the Public Record Office, where it was retained as a reference work for readers, but it sold poorly. Bullen concluded that the public had little interest in merchant seafaring. The concept was not new: Edward Blackmore had covered much of the same ground in 1897.[16]

In *Our Heritage the Sea*, Bullen approached his concern through the language of popular marine science. He examined the ocean as a reservoir for health, then discussed marine meteorology and oceanography, which lead to the ocean as a source of food and its role as the world's major highway. After a discussion of the ocean in the military context, Bullen reached his real object: "What the Ocean Means to Great Britain." This essay discussed Anglo/German rivalry and risks to Britain's flow of raw materials and food imports in the event of conflict. Moreover, he looked ahead to the rise of Japan and the ousting of European influence from the Pacific region.

Another theme which permeated Bullen's short pieces was the observation of marine life and its behavior. In *Creatures of the Sea*, one of his longer books, he took issue with the dry style of textbooks on marine biology, and, in some details, with the accuracy of the information offered by their often land-based writers. His purpose was both to correct errors and to provide a text that would hold the reader's attention. In his words:

> *With this object before my eyes, I now essay a series of lives of the Deep-Sea People, based very largely upon personal observation, buttressed by scientific facts and decorated by imagination.* (*Creatures*, 10)

Modern marine scientists would not countenance the anthropomorphism, but they can hardly argue with his description of each animal or the information based on personal observation. There was no attempt at a comprehensive coverage; Bullen concentrated on the species seen from ships or encountered when in port. Nevertheless, he devoted a chapter each to some forty species of marine mammals, fish, turtles, cuttles, birds, and seaweed. In his discussion of sharks, Bullen despaired at the legacy of ill-informed myth which made sharks so disliked. He wondered at the relationship between the tiny pilot fish and the shark: the pilot fish seemed to sense danger when seamen trailed a baited shark hook. He almost painted the shark as a victim:

> *I dismiss as utterly unworthy of any notice whatever all the stories that have been told of the Shark's innate ferocity and calculating devilishness. As I have often had the pleasure of saying, the Shark eats man, not because he loves man to eat, but because man when he falls overboard is usually easy to get. If the man be a good noisy swimmer, no Shark will venture near, for they are, though tormented with hunger, a most nervous and timid race, and, indeed, seem to me to lose a great many opportunities through diffidence.* (*Creatures,* 110–1)

Similarly, Bullen dismissed all the stories of sea monsters in his discussion of the Giant Cuttle Fish or Squid, which he identified as the Kraken of Norse legends. He found fault with the episode in *Moby Dick* in which Melville had Starbuck comment, "The great live Squid, which, they say, few whale ships ever beheld and returned to their ports to tell of it." Bullen showed that the Squid was the main food of the sperm whale, as may be seen from the contents of its stomach.

The remaining facet of Bullen's nonfiction saw him in the role of travel writer. His column in the *Morning Leader* led to an invitation to join HMS *Mars* as its special correspondent during maneuvers in 1899. He brought together his reports in a paperback. For his voyage as guest of the Royal Mail Steam Packet Company on a round-trip voyage to the West Indies and Central America, he was "encouraged" by the offer of a sizable fee and a passage for a secretary, if he would write about the voyage. *Back to Sunny Seas* was a "comfortable" book compared with Bullen's accounts of his voyages in the fo'c's'le. It contained the usual word pictures of the places visited. The ships were generally in the background, although Bullen was full of praise for the efficiency of the service and the standards on board: Owen Phillips, the owner, must have been well pleased. Bullen's self-financed lecture tour of Australia and New Zealand, described in *Advance Australasia*, was financially unsuccessful. His lecture visit to the United States was accorded only passing reference in *Recollections*.[17]

Only a brief discussion of Bullen's fiction is attempted here, as many of his later works have yet to be studied, but his novels can perhaps be divided between general and children's fiction. In his early years as an author, Bullen drew heavily on personal experiences. It was probably inevitable that he should turn to the novel as a means of maintaining his output. Many of his works contained religious and moralistic overtones, with the common theme of a youngster being dragged down by the temptations of the world before rising above them to become a good example to others. His children's books were acceptable as Sunday school and newspaper prizes.

In *A Compleat Sea Cook,* Bullen's "hero," Johnnie, was given shore leave in Calcutta, where, reduced to a physical wreck through debauchery, he was rescued by his captain and returned to his ship.[18] While the ship was loading, the seeds of his salvation were sown by a group of American evangelists:

> *...they visited Johnnie with hearts full of love, and bearing in their hands delicate food to tempt the poor appetite.... He begged to know who they were and why they bothered their heads about him. Very humbly and quietly Johnnie was informed of the truth, while the hot blushes of shame came and went on his wan face as he thought of the many hard things he had said of people like these.* (*Sea Cook*, 77–8)

With the strength of youth lost and despised by the rest of the crew, Johnnie found contentment in becoming a first class ship's cook. Johnnie's experiences in Calcutta were not Bullen's, but Bullen knew Calcutta well and had enjoyed visits to an American-run seamen's mission there.

Bullen's first novel, *Apostles of the South East*, was the story of the religious aspirations of the residents of Lupin Street, Rotherithe, a

location written off by church and chapel alike. The story chronicled their struggle to acquire and convert an old cowshed, as their own self-run hall for communal worship. Woven into this was the story of Saul, a Christian seaman, who supported the group when in London, and his experiences at sea. The priesthood of all believers came through strongly as a local revival, including open air services, took hold. In his preface, Bullen did not discount totally the idea that the novel bore a close relationship to his own religious development and involvement with a free chapel once he had come ashore.

*A Whaleman's Wife*, Bullen's second novel, saw him reverting to his fascination with the American whaling scene. It was written soon after his tour, and the whaler concerned again belonged to New Bedford. His hero, Reuben Eddy, of New England farming stock, frustrated in love, succumbed to the lures of a recruiting agent. Priscilla, a childhood playmate, had married a whaling captain who took her to sea with him. Bullen drew heavily on his own whaling experience to sustain the events of two parallel whaling voyages. Predictably, Reuben and Priscilla ended up on the same ship. A series of disasters culminated with an unrecognized Reuben, Priscilla, and her dying husband adrift in an open boat. Following the death, Reuben:

> *...was torn with raging conflict between his desires and his fears. Would Priscilla, after all, love him? Dare he make himself known without appearing to take unmanly advantage of her helplessness, her utter need of some strong arm upon which to lean, whether she love its owner or not so long as he was kind? ...Presently lifting her head Priscilla's gaze met his. For a moment she stared spellbound, then gasped, "Rube, its you, its you. O God, how good you are to me!" And she bent towards him.* (*A Whaleman's Wife*, 372–3)

Of course, they were rescued and finally returned to New Bedford to settle down together.

In *A Bounty Boy*, Bullen combined a whaling setting with an historical context. In his novel, descendants of the mutineers from HMS *Bounty* migrated from Pitcairn to Norfolk Island, where they led a simple, religious style of life. Christmas Bounty Adams, an ideal young Christian but an innocent in the ways of the world, shipped in a passing whaler, the *Eliza Adams* of New Bedford, as captain's boat steerer. Adams, the central character, was repeatedly tested, both through his ignorance of ships and the jealousy of his shipmates. His strength of character enabled him to rise above the pettiness. Interwoven with such episodes were descriptions of whaling operations which could find their place in any book on South Seas whaling practice. In this passage, five whales have been captured, and forty men were now toiling to process the blubber:

> *...I would like you to realise the scene. The immense masses of blubber being hove inboard by the full power of the crew at the windlass, the great tackles groaning and the ship canting over under the load, the unwearying thrust and recover of the long-handled spades as the toiling officers and harpooners laboured to disjoint the huge heads or scarph the blubber so that it would strip easily from the carcasses.... Daylight saw the huge task completed and the ship's deck from one end to the other blocked with the mighty masses of case and junk and blanket pieces. The blubber-room...was choked full...and... the rest had to be piled on deck.* (*A Bounty Boy*, 130–2)

Bullen was at pains to justify the authenticity of his story and continued:

> *Old whalemen will doubt the possibility of such a feat as the cutting in of five sperm whales in twenty hours until I explain that none of the whales were too large to have the case lifted inboard, and that, of course makes all the difference; for I have been twenty-four hours en-*

*gaged in cutting in one whale.... But then that whale was so huge that many time-wasting things had to be done that were unnecessary in the case I am relating.*

Having left the whaler as servant to her injured captain returning home as a passenger, Adams crossed America from west to east, experiencing nineteenth century technology, the machinations of the press; married, and ultimately returned to settle in Norfolk Island very much the wiser for his experiences.

In a final example of his fiction, *Sea Puritans*, Bullen tried his hand at a historical novel. The story started with Robert Blake's march to Lyme in 1643, and followed his sea career to his death in 1657.[19] The story was supposedly told through two of Blake's followers, Lyme seamen Martin and Thomas Penfold, but Bullen allowed himself such lengthy asides in which he related the history of the period in comparison to later periods that the work seemed, at times, to be simply a popular history. In his chapter, "England in the Middle Sea," there was a lengthy discussion of the political and religious scene, references to Nelson, and to the ways in which news spread around a 15,000-ton battleship!

While there are problems with the chronology of Bullen's experiences as related in his works, there is little to cast doubt on the authenticity of individual episodes. He was best when describing personal experiences, writing that makes compelling reading even today. His insights into sealife on sailing ships were a valuable contribution to the maritime social history of the 1870s, and his novels were of the period, finding their place alongside a host of similar, largely forgotten authors. Their mix of moralizing and religion does not have the same appeal today. Further, it must be doubted whether some are pure novels, given Bullen's tendency to revert to descriptive writing within his stories.

As an apologist for merchant shipping and seafaring, Bullen's journalistic work made a contribution to raising the profile of seamen. He found favor with sections of the shipping press, notably the *Guild Gazette*, organ of the Merchant Service Guild, an officers' association.[20] On the other hand, he was found wanting for expressing outdated opinions based on the sailing ship at a time when the bulk of the industry had advanced to steam. Havelock Wilson, the leader of the National Sailors' and Firemen's Union, exposed this weakness when Bullen was giving evidence to the Committee on Continuous Discharges in 1900.[21]

The most obvious contemporary author with which to compare Bullen was Joseph Conrad. They were both born in 1857 and had turned to writing after sea careers. Conrad came ashore in 1894, and had his first novel published in 1895, probably not long after Bullen had his first piece published. *Cachalot* made Bullen widely known almost overnight in 1898, but it was not until 1914 that Conrad had his first popular success, *Chance*. Unfortunately, the sum of Bullen's work, despite its attractions, did not have the durability of that of Conrad, and his works are not accorded the status of literature as are those of Conrad.

*Before pursuing an academic career, Alston Kennerley was employed at sea by Alfred Holt and Co. of Liverpool (the Blue Funnel Line) as an apprentice and deck officer. His first year at sea was in the German four-masted barque* Passat. *After passing his foreign-going master's certificate, he read history at university in Wales, then for many years taught navigation to merchant seafarers in Plymouth, England. He now teaches Maritime History at the University of Plymouth, where he directs the Marine Studies Undergraduate Programme, and pursues his research and publishing in maritime, social welfare, and educational history. He is Chairman of the Nautical Institute's Education and Training Committee, and a member of the International Commission for Maritime History (British Commission).*

# Acknowledgments

*An earlier version of this article was presented at King's College London, 13 October 1994, in the International Commission for Maritime History (British Commission/Society for Nautical Research, Maritime History Seminar series). I am indebted to Dr. Roger Morriss, formerly of the National Maritime Museum, London, who not only recommended me to* The Dictionary of National Biography *to contribute the entry for Bullen, but also provided me with copies of Bullen's examination applications and certificates as second mate and first mate, thereby setting me off on this avenue of research; David C. Retter and the Research Service of the Alexander Turnbull Library, National Library of New Zealand; and D. C. McDonald, Reference Librarian, The Hocken Library, University of Otago (Dunedin, NZ), for information relating to Bullen's whaling voyage.*

# Notes

1. Frank Thomas Bullen, *The Cruise of the "Cachalot" Round the World After Sperm Whales* (London: Smith Elder, December, 1898); Kipling's letter to Bullen was included as a Foreword.
2. Alston Kennerley, "Bullen, Frank Thomas," C. S. Nicholls, ed., *The Dictionary of National Biography: Missing Persons* (Oxford: Oxford University Press, 1993), 100–1.
3. Frank Thomas Bullen, "Christmas Dinner Aboard a Whale," Brandt Aymar, ed., *Men at Sea: The Best Sea Stories of All Time from Homer to William F. Buckley, Jr.* (New York: Crown, 1988; London: Barrie and Jenkins, 1989), 597–602 [from *Cruise of the "Cachalot"*]; Frank Thomas Bullen, "A Submarine Earthquake," Jonathon Raban, ed., *The Oxford Book of the Sea* (Oxford: Oxford University Press, 1992), 314–7 [from *Idylls of the Sea*].
4. "A Day on the Solander Whaling Ground," *Chambers' Journal* (Edinburgh: 24 March 1894), 186–8 (unattributed) ; *A Whaleman's Wife* (London: Hodder and Stoughton, 1902); *A Bounty Boy: Being Some Adventures of a Christian Barbarian on an Unpremeditated Trip Round the World* (London: Marshall, 1907; Holden and Hardingham, 1912). Bullen's writing included some thirty-six books, of which fourteen have yet to be located. His journal articles and short stories number at least seventy and appeared mainly in leading London magazines such as *Spectator* and *Cornhill Magazine*. Some were syndicated in *Littel's Living Age* (Boston), *Eclectic Ma*gazine (New York), and *Century* (New York). As a columnist on the London daily newspaper, *Morning Leader*, he probably produced well over 100 articles.
5. *Log of a Sea Waif: Being Recollections of My First Four Years of Sea Life* (London: Smith Elder, 1899), Chapter 13; *Confessions of a Tradesman* (London: Hodder and Stoughton, 1908), *passim.*; *Creatures of the Sea* (London: Religious Tract Society, 1904); Herman Melville, *Moby Dick* (Ware, United Kingdom: Wordsworth Classics, 1992) is the version referred to here.
6. *Men of the Merchant Service: Being the Polity of the Mercantile Marine for Longshore Readers* (London: Smith Elder, 1900); *Our Heritage the Sea* (London: Smith Elder, 1906).
7. *Idylls of the Sea and Other Marine Sketches* (London: Grant Richards, 1899), 238–44. This was the first of several collections of his articles. At this time, *Splendid* was a British ship registered at Dunedin, New Zealand, Official Number 61,018 (quoted as 6,018 in Bullen's applications), barque, 357.85 tons net register, two decks, length 109.5', breadth 27.2', depth 18.3'. She was entered in the register at the Port of Dunedin on 23 October 1874, having been sold to New Zealand owners in 1873. She was probably the vessel of that name built in Massachusetts in 1835. She stranded at Kaipara on 7 February 1890 and became a total loss: M. N. Watt, *Index to the New Zealand Section of the Register of All British Ships.* Bullen's examination applications and certificates are held at the National Maritime Museum, London, under his certificate number, 04,758: Second Mate, 13 March 1878; First Mate 5 August 1880. *Splendid's* movements in and out of Otago Harbor (Dunedin/Port Chalmers) were recorded in the local newspapers, *Otago Daily Times*, *Otago Witness* and *Otago Guardian*, and include reports of court proceedings concerning the crew's refusal to obey orders, and what were called "logbook extracts."
8. *Deep Sea Plunderings: A Collection of Stories of the Sea* (London: Smith Elder, 1901).
9. *Deep Sea Plunderings*, 90–102.

10. *Cornhill Magazine* (1897).
11. *With Christ at Sea: A Religious Autobiography* (London: Hodder and Stoughton, 1900); *Recollections: The Reminiscences of the Busy Life of One Who Has Played the Varied Parts of Sailor, Author and Lecturer* (London: Seely Service, 1915) [published posthumously].
12. *Deep Sea Plunderings*, 183–92.
13. The Public Record Office, London, holds the merchant seamen's service ledgers, while the crew agreements have been found in the Maritime History Archive, Memorial University of Newfoundland.
14. This was probably "The Sperm Whale and its Food," *Nature* 54 (4 June 1896), 102. "Some Incidents of the Sperm Whale Fishery," *Cornhill Magazine* 75 (April, 1897), 642–51.
15. *The Apostles of the South East* (London: Hodder and Stoughton, 1901).
16. Edward Blackmore, *The British Mercantile Marine* (London: Griffin, 1897).
17. *The Way They Have in the Navy: Being a Day to Day Record of a Cruise in HM Battleship* Mars *During the Naval Manoeuvres of 1899* (London: Smith Elder, 1899); *Back to Sunny Seas* (London: Smith Elder, 1905); *Advance Australasia: A Day to Day Record of a Recent Visit to Australasia* (London: Hodder and Stoughton, 1907).
18. *The Compleat Sea Cook* (London: Partridge, 1911).
19. *Sea Puritans* (London: Hodder and Stoughton, 1904).
20. Known later as the Imperial Merchant Service Guild, this officers' and masters' association had a high profile from 1893 to the 1920s. A number of Bullen's pieces from the *Morning Leader* were reproduced in its organ, the *Guild Gazette*.
21. "Report of the Committee Appointed by the Board of Trade on the Question of Continuous Discharge Certificates for Seamen," *British Parliamentary Papers* (1900, LXXVII, 107 [cd.136], questions 20044–20148.

Seacrest Manor

131 Marmion Way
Rockport, MA 01966
(508) 546-2211

"Overlooking Woods and Sea"

**"One of the Outstanding reasons to visit New England":**
*Yankee Magazine's Travel Guide to New England*
*A 1996 "Editors' Pick*

Decidedly small – intentionally quiet. Gracious hospitality in luxurious surroundings with magnificent views. Our famous full breakfast & tea included. Spacious grounds, lovely gardens, ample parking. No pets – not recommended for children. Read about us in MOBIL GUIDE ★ ★ ★ & FODOR'S. May we send you our brochure?

**TWENTY-FIVE YEARS OF EXCELLENCE**
OPEN APRIL THRU NOVEMBER
A NON-SMOKING INN
Hosts: Leighton T. Saville & Dwight B. MacCormack, Jr.

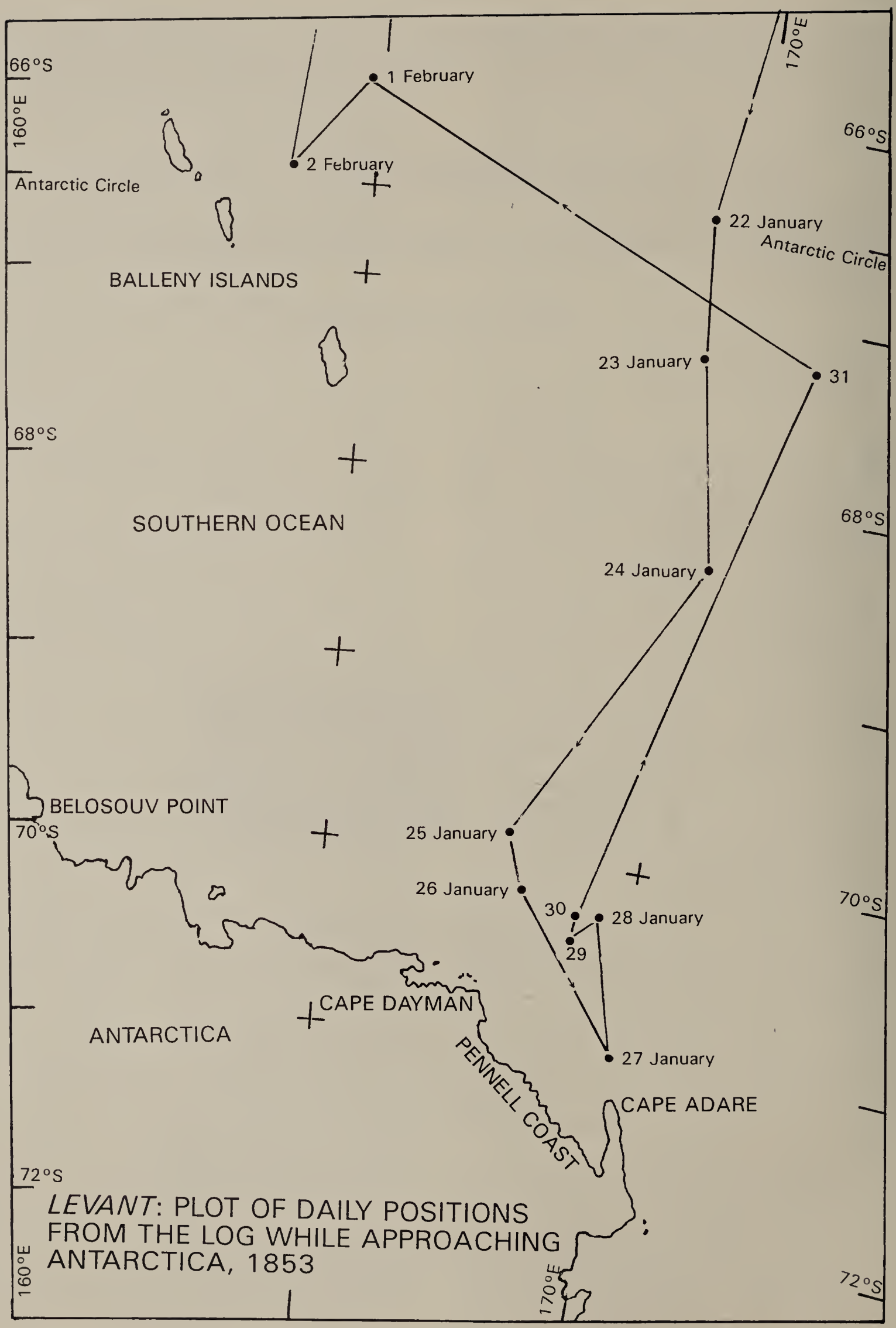
# An Early Antarctic Landing
## Captain Cooper's Log of the *Levant*, 1853

ROBERT KEITH HEADLAND

Among the contributions to the discovery and geographical knowledge of the Antarctic, those of the early sealers and whalers are most poorly known, and their discoveries greatly underestimated. The sealing industry extended to Antarctic regions shortly after the discoveries of Captain James Cook's second voyage (1772–75) were published (*Cook*, 1777). The earliest record of sealers operating in the Southern Ocean dates to 1780, on South Georgia (*Stackpole*, 1972). An enormous increase in the number of sealing vessels in the Antarctic occurred after the discovery of the South Shetland Island by William Smith aboard *Williams* on 10 February 1819. These islands had a very large population of the Southern Fur Seal (*Arctocephalus gazella*) and are at the southernmost limit of its breeding range. Most of the sealing took place during the 1819–20 and 1820–21 austral summers. A few more seasons were productive; however, the exploitation was so severe as to bring the species almost to extinction and cause the industry to deploy elsewhere. Indeed, the Southern Fur Seal remained a very rare animal until the last few decades, during which its numbers recovered immensely.

Two aspects of Antarctic sealing are particularly significant because of their consequences for geographical discovery: the constant search for new grounds, and the importance of secrecy concerning them. The former was mainly because many sealers considered that too much exploitation caused seals to migrate elsewhere (in truth, it was because local populations were nearly exterminated), thus sealers were constantly searching for new islands to which the seals moved. The latter was to avoid competition on newly discovered sealing grounds, thus, secrecy became part of the capital of the sealers' trade. This, incidentally, made details of geographical discoveries particularly difficult to determine. Of the peri-Antarctic islands, a third were discovered by sealers who made the first recorded landings on half of them. A third aspect of the industry is also important; over a thousand sealing voyages were made to the Southern Ocean and peri-Antarctic islands during the nineteenth century — effectively rendering discoveries ineluctable. It is interesting to compare the Antarctic discoveries by sealers made during the nineteenth century with those of whalers during the twentieth (*Headland*, 1993). Ignorance of their extent is common to both.

Antarctic sealing was undertaken in small vessels, usually of about 300 tons capacity (about $84m^3$). These sailed with crews of about sixteen men to reach a sealing island at the beginning of the austral summer. The vessels usually returned north before winter began. However, the occasional one wintered, and a sealing gang sometimes remained in a shanty or cave, to be relieved during the next season. Fur Seals and Elephant Seals were taken, the first preferred as a higher profit was made from the skin than from oil, the product made from the second which was often taken on a combined




*LEVANT*: PLOT OF DAILY POSITIONS FROM THE LOG WHILE APPROACHING ANTARCTICA, 1853

voyage also securing whale oil. Barely a dozen published accounts give firsthand details of the southern sealing industry.

The first recorded sighting of the Antarctic continent was on 27 January 1820, when Fabian Gottlieb Benjamin von Bellingshausen, in command of a Russian expedition aboard *Vostok* accompanied by *Mirnyy*, saw the ice shelf at about 69·35°S, 02·23°W (*Armstrong*, 1971). During this and the subsequent austral summers, the Antarctic Peninsula was also sighted from sealing vessels working at the South Shetland Islands. During the 1820–21 summer, two sealing masters landed independently on the Antarctic Peninsula — thus becoming the first on the continent. These were John Davis aboard the shallop *Cecilia* from Nantucket via the Falkland Islands on 7 February 1821 (*Stackpole*, 1955) and John McFarlane aboard *Dragon* from London via Valparaiso (no note of the date of this is known, *Jones*, 1985). In both of these instances, few other details are given because Fur Seals were not found. In consequence, the landings were of little interest to those who accomplished them. These are the only recorded landings (their order is equivocal) from at least sixty sealing vessels from Britain and the United States which worked at the South Shetland Islands during that season. In the 1821–22 summer, Joseph Usher is recorded as landing on the Antarctic Peninsula south of Deception Island from *Caraquette* of London. He also reported no fur seals (*Jones*, 1985). It is virtually certain that other continental landings were made but, for the same reason, were regarded as of little interest.

Later during the century, several scientific and other expeditions explored Antarctica, and four of these came very near to its shores. The 1830–33 British expedition led by John Biscoe aboard *Tula*, from London, sighted Enderby Land on 24 February 1831, and landed on one of the Pitt Islands (off the Antarctic Peninsula) on 31 February 1832 (*Murray*, 1901). The 1837–40 French naval expedition from Toulon, led by Jules-Sébastian-César Dumont d'Urville aboard *Astrolabe* accompanied by *Zélée*, despatched a party in two boats which landed on Île du Débarquement (Terre Adélie), 22 January 1840 (*Rosenman*, 1987). The United States Exploring Expedition of 1838–31, led by Charles Wilkes aboard *Vincennes*, accompanied by five other vessels (the fleet divided in the course of the voyage), sailed westward closely along the coast of Wilkes Land, discovering and charting a series of landfalls and "appearances of land" between longitudes 160°E and 98°E from December 1839 (*Bertrand*, 1971). The British naval expedition of 1839–43 led by James Clark Ross aboard HMS *Erebus* accompanied by HMS *Terror* discovered and roughly charted 900 km of coast in Victoria Land. They landed on Possession Island on 12 January and Franklin Island on 27 January 1841, and discovered Ross Island February 1842 (*Ross*, 1847). All these landings were near or within the Antarctic Circle, well south of those by sealers on the Antarctic Peninsula.

Although close to the continent, these landings were on adjacent islands only. The fourth recorded continental landing was identified during examination of manuscript records of sealers and whalers. The log of *Levant*, Captain Mercator Cooper from Sag Harbor, New York, is preserved in the East Hampton Library (*Cooper*, 1851–55) and records a landing on the Pennell Coast of Victoria Land on 27 January 1853 (civil date).

The log of the *Levant* is somewhat terse, but interesting sketches appear in its margins. The extract from 23 January to 3 February 1853 during a voyage well south of the usual limits of navigation is appropriate to quote here in full. The text is rendered with the original spelling and grammar — both exhibit the inconsistencies common in such logs.

> ther[mometer] 28 to 30 [Farenheit]
> Sunday the 23rd of Jan 1853 | These 24 hours Commences with | fine pleasant weather with a light | breze from SE at 2 pm Calm at 5 pm light | brezes from NE at 8 pm at 3 am NW at | 4 am snow squall 5am wind W at 6 SW at | 7 am SSW at 5 am saw a large | quantity of field ice to the west | of us extending to the South West the | at that time hauled to the South | West so we could not follow the edge | of it saw several hum-

backs along | it a number of Icebergs in sight | and we are continuly passing it | saw the Ice pidgeon flying around | the ship a Clear atmosphere with | the exception of broken clouds passing | at times a sprinkle of Snow from | the passing Clouds very few birds | birds around saw one sea hen
Lat 67:17 Long 169:45

ther 28 to 32
Monday the 24th of Jan 1853 | These 24 hours Commences with light | brezes from SW at 4 Pm Came up with | the field Ice extending from a SE to a | NW direction we followed along to the East | till we saw a small opening we then | hauled on the wind to the southward | a number of Icebergs in sight at 10 Pm | Calm at 11 Pm light breze from N by | E at 2 Am came up with field ice so | we had to run along it to the Eastwd | to find an opening at 6 Am we found | a passage to the south, we shoved through | where the Ice is small and then | came to a Clear oppen sea to the | South as far as we can see from | masthead at 9 Am fine breze from | NE over Cast with broken Clouds | at 11 Am no ice to be seen from | masthead saw a few Sulpher bottom | whales and saw the Icepidgeon
Lat 68:23 Long 170:14

ther 28 to 31
water 30
Tuesday the 25th of Jan 1853 | These 24 hours Commences with fresh | brezes from NE steering SSE at 2 Pm | two or three humpacks at 2 Pm Cloudy | attended with snow at 4 Pm took in | the mainsail and the main topgallant | sail and fly jib and reefed the mizentop | sail at 9 double reefed the topsails | at 11 Pm Cloosrefed the fore topsail | and took in the jib thick snowstorm | wore ship to the Northward at 1 Am | woreship to the southward and | continued in waring every 2 hours till | 6 Am when it stopt snowing we then | steered on to the Southward at 10 Am| we came up with Iceybearer | Tuesday Continued The Iceybearer | appeared in a ESE and a WNW direction | we stood up as near as it was prudent to | go with the wind blowing a gale from ES | E under Close reefed topsails the field | ice became thick around the ship and | increased in size we wore ship and | steered on the wind to the NEastward | we saw a large icey mountain in a | Southwesterly Direction it being a | long distance of i Should Judge it to be | from 70 to 100 miles Distance in the| Lat of 68:00 we left the Ice and saw none | till we got up with the Ice bearer | in the Lat of 70.00 there being two degres | of Lat of Clear sea i dont know the extent | of the Longitude it has ben a great part | of the time sleet of snow from the Eastwd | it appars to Clear at times to the South | Westward the sea for so heavy wind is small and Sharp | by the appearance there is a bearer to the | Eastward of us at time the icepidgeon is | flying around of the ship.
Lat 69:56 Long 167:50

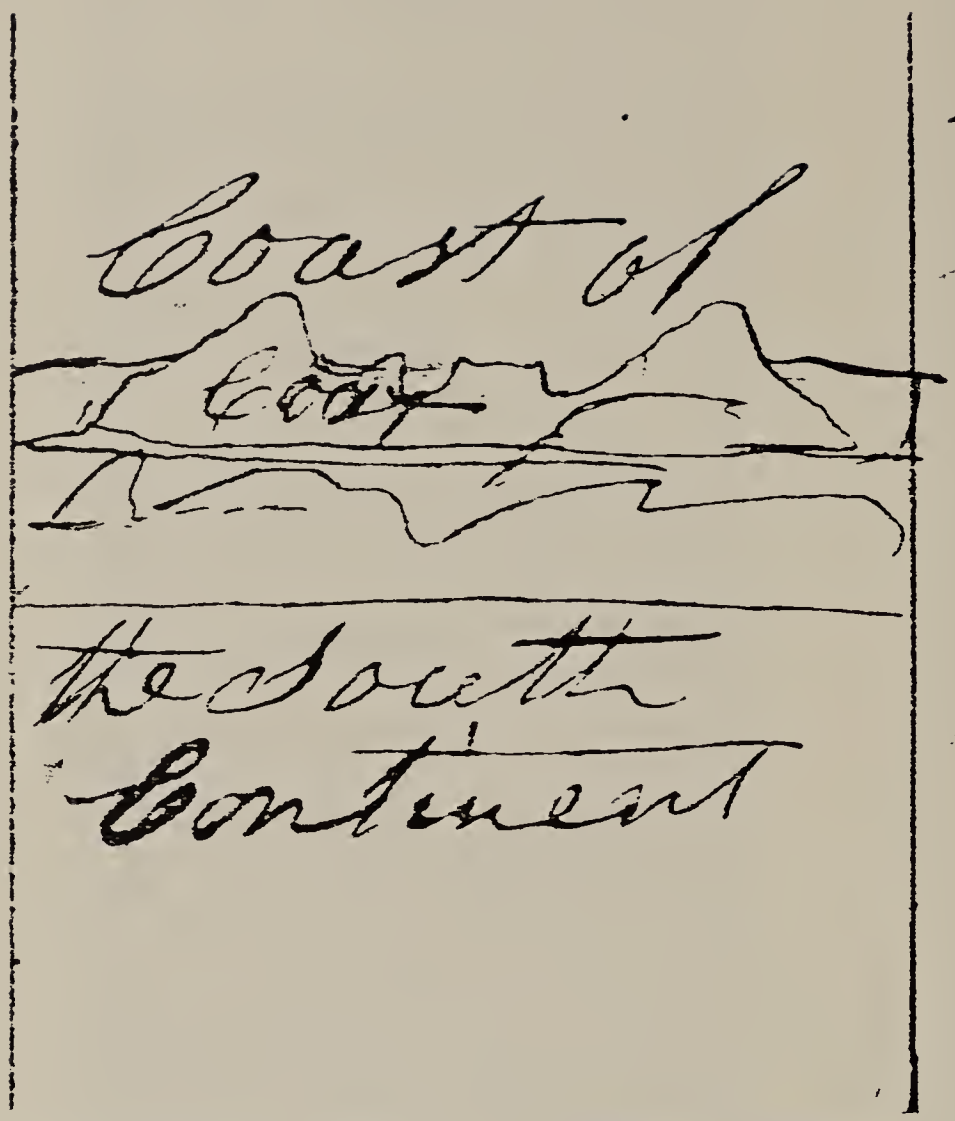
ther 30 to 31
Wednesday the 26th of Jan 1853 | These 24 hours Commences with fresh | gale from SE by E steering on the | wind to the NEastward under Cloos | reefed foretopsail and double reefed | main topsail at 3 Pm moderates some | at 6 Pm let a reef out of the topsails | and woreship to the Southward it | graduely moderated and made sail | accordinly at 12 wore ship to the | NEastward the Sun didnot go blow | the horizon at 4 Am wore ship to | the Southward at 8 Am the Ice | bearer insight together the high | Mountains back in the interier at 10 Am | pleasant breze at halfpast 11 Am we came | up with bearer and lowered a boat and | went to it and landed on it we saw | a number of penguins about the Ice the | Ice is here broken in large flakes and droven | soled together and a num-

ber of large bergs | mixed in the bearrer along the front | edge is from 4 to 15 feet out of the watter and | as it goes back it appears to be at consider | higher there is two or three peaks of | mountains a longway of and are very high | the atmosphere is tollerable Clear in | the Southward the wind remains in the | SE by E and Clouday the bearer runs | to the SE and NW with deep bends | in it and in some places the loos ice | forms pints and extend off from 2 to | 3 Miles the sea smooth no whales | of any kind has been seen to day a | number of the Ice pidgeons flying | around the ship no other kind in sight | with the exception of Mothercarrys | chicken them we see where we | go
Lat 70:10 Long 168:09

ther 28 to 30
Thursday the 27th of Jan 1853 | These 24 hours Commences with moderate | breze from SE by E steering on the wind | to the Eastward following the pact ice | at 3 Pm we came to a pint where the | Ice wound away to the southward | tacked ship and steered along the | Ice to the southward at 5 Pm saw | 2 sulpher bottoms a going to the south | at 8 Pm bgan to snow and snowed by | spells through the night at 8 Am | we came up with the heavy ice | extending into the SE and it being | a thick snowstorm we couldnot see | but a little distance we tacked | ship and steered on the wind to the | NEastward at 10 Am fresh brezes reefd | the topsail the wind is increasing | very fast and thick driving snow at 11 Am | double reefed the fore and main top | sails and Cloos reefed the mizen top | sail and took in the mainsail | foresail and jib at 12 heavy gale | from SE by S the snow is so thick that | we could not see a short Destance from | the ship we Judg ourselfs at 8 Am | in the Lat 71:00 it keeps us busey in | shoveling snow of the deck so we can | get around the deck
Lat 71:00 Long 170:00

ther 28 to 30
Friday the 28th of Jan 1853 | These 24 hours Commences with heavy | gale from SE by S at 1 Pm Close reefed the | fore and main topsails at 3 Pm it blows very heavy in | squalls the snow is driving so thick that we cannot see | but very little dist from the ship at 5 Pm wore ship | and took in the Clooserefed mizen top sail to keep | it from blowing away the gale still increase | we were obliged to get a line from the windls | bits along to the bits at the mainmast and | then to the bits to the mizenmast on | each side so we could get fore and aft about | the deck on account of the snow and | Ice on deck the driven snow is mixed with the | spray of the sea that blows of and Comes on | deck maikes i quite salt and that makes it | give some on deck which makes it very | slipry the Icecickles are hanging in every | Direction about the ship we took in the | bow boat and hoisted the other boats up | on the upper Cranes and got every thing | secure before it Came on heavy there | is a very sharp short sea which makes | the ship above hard the ship behaves as well | as a ship can under the same circumstance | at halfpast 9 Pm wore ship at halfpast 10 P we | drove through between 2 Icebergs the gale still increased at 1 Am the snow dont come | so thick we can farther saw another Ice | berge a short distance to the windward of | us at 2 Am the gale to the hight at 3 Am the | snow has nearly ceased at 6 Am moderates | some the squalls is not so often there a heavy | combing sea on still remains thick and a | little sleet of snow.
Lat 70:20 Long 169:30

ther 30 to 36
Saturday the 29th of Jan 1853 | These 24 hours Commences with heavy | gale from SE by S lying to under two Cloos | reefed topsails at 2 Pm moderates some




*Coast of the South Continent.* Margin sketch from the log book 30 January 1853 entry.

of the | Squalls is not so often and less severe at 4 Pm | graduly moderating at 5 Pm it brakes away | some so we Can see the sky in places | let one reef out of the fore and maintop | sails and sot the fore-sail at 6 sot the | mizen topsail reeft at 7 Pm sot the jib | at 8 it is amoderating fast at 1 Am a light | breze loosed all sail a number of Ice | bergs in Sight we can see in the South | the peaks of Mountains a Long way off | at 10 Am a light breze from SE by E | at 11 the Cost is plane in sight extending | to ESE and WNW i should judge to be | 30 miles to the South of us saw a hare | seal and a number of Ice pidgeons lying | on the Ice asuning themselfs as we | frequently see our foul in the sun | i took the ther-momiter by the sun side of | an Iceberg it rose from 36 to 50 in a short time
Lat 70:27 Long 169:10

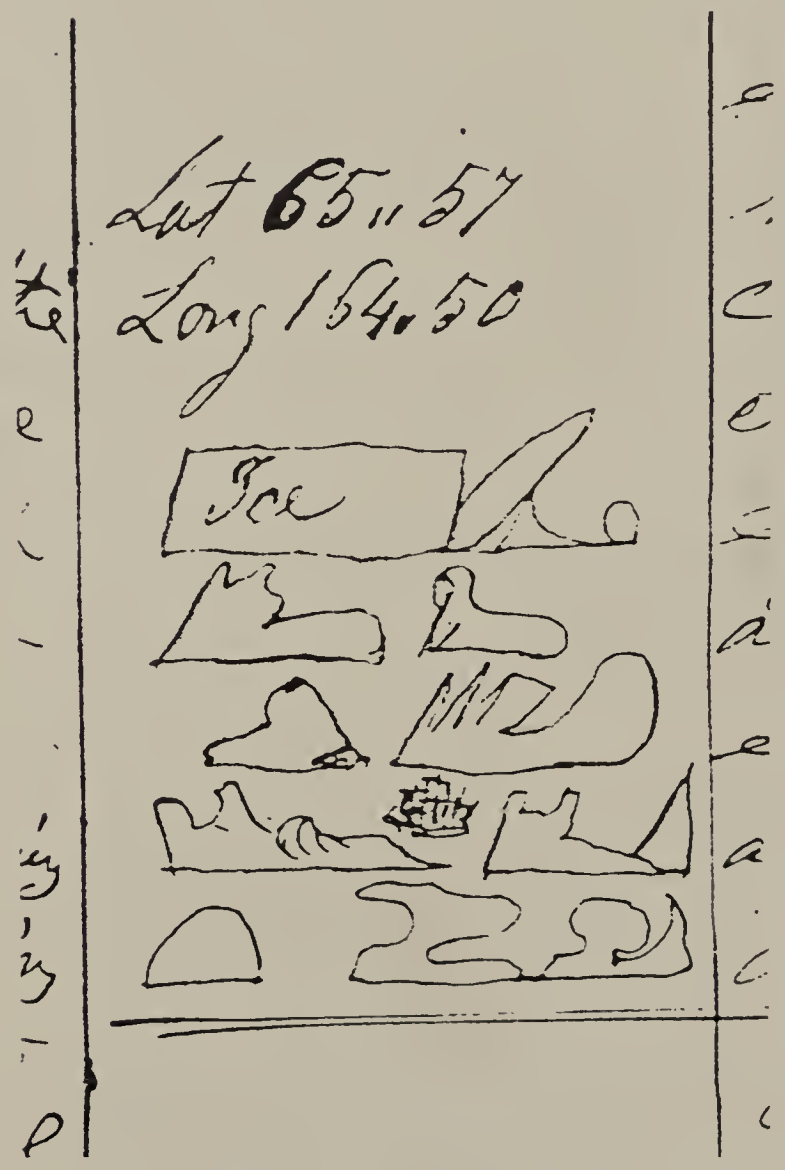
the 36 to 29
Sunday the 30th of Jan 1853 | These 24 hours Commences with Calm | the Coast in sight at times there a thin | mist back that Clears up and shows | the peaks of two large mountains | they appear to be a long-way of their | head is beded in the Clouds one bears | South the other SSw there is others | of a less hight there appears to be | a strong under Current seting to the | Westward for the large Icebergs are | aseting along the Coast and by the ship | at the rate of one mile and over per | hour i canot see that there is any Current on | the surface for the small Ice re-mains | still around the Ship at 7 Pm it begins | to Cloud up all over at 8 Pm begins to | snow at 9 Pm light brese from SE by S | 1 Am brezes on at 2 took in the top | gallantsails, at 3 Am reefed the top | sails a thick snowstorm 5 Am Double | reefed the topsails and took in jib | spanker and mainsail at 6 Am fresh | gale and driving snow at 11 Am the | snow slackes at times the Clouds be | gins to brake some
Lat 70:20 Long 169:20

ther 32 to 29
Monday the 31st of Jan 1853 | These 24 hours Commences with fresh | gale from SE by S by 5 Pm steered off to | the Northward at 8 Pm Snow squall | at 11 Am a number of Icebergs in | sight some very large saw hump | backs the gale remains the same | Clouday the most of the time |and snows by spells through the | 24 hours
Lat 67:14 Long 171:43

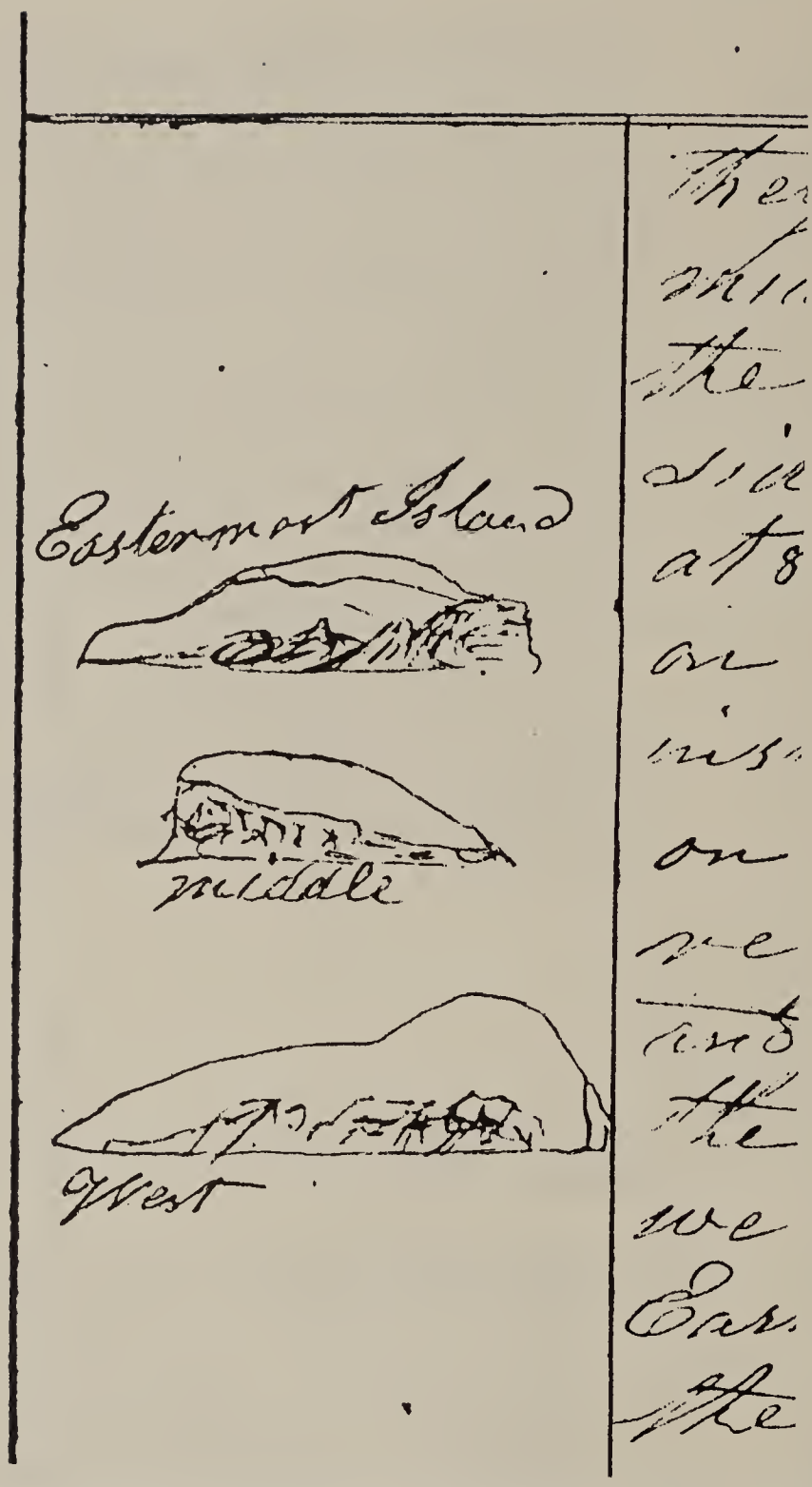
ther 32 to 30
Tuesday the 1st of Feb 1853 | These 24 hours Commences with fresh | gales from SE by S steering to the N | West-ward at 2 Pm passed several large | Icebergs at 10 Pm Came into another |

Cluster of Icebergs and ran through them | till 3 Am and then they began to be | scattering at 10 Am saw a number of | humpbacks and a number of Cape | Pidgeons and other kinds of fowls at 10 | Am the Iceybenrrer in sight to the | S West of us the breze Continues strong | and steady from SE Clouday at times | snow the sun breaks through the Clouds | at times so we can get the Latitude and | the Longitude most of the time
Lat 65:57 Long 164:50

Wednesday the 2nd of Feb 1853 | These 24 hours Commences with fresh | gale from SE by S at 1 Pm we saw what | had the appearance of Land in the | SW we hauled up for it after passing | a number of large icebergs at 6 Pm we | Came up with the field ice which | Extended some ways from the shoar | at 7 Pm there appears to be three Islands | one bearing from us SSE Dist three to four | miles another which is the smallest bearing | S b W Dist six to Eight miles the other | which is larger than the other two | bearing W by S Dist fifteen to twenty | miles it was blowing fresh so i didnot | attempt to try to land the bluffs along | the west and north side is mostly Clear | of Ice so the bear rocks shows them | selvs to allmost to the top and then | comes a layer of Ice for several feet thick | they are moderately elevated the midil | middle one the lowest the Westermost | the highest the middle one on the NE | side shows the most of its bluff barerock | at 8 Pm halled off shoar and stood off and | on till 11 Am in hopes it would moderate | insted of moderating it graduely brezes | on so we had to Come to doubble | reefed topsails and took in the Coarses | and jib the barrometer is a-falling and | the apearance of Coming on a heavy gale | we have had Continuel wind from S | East for several days and the most of | the time blowing agale so we have | a very poor Chance of seeing whale and | if we did see them it has been very un | favorable we have not been thirty | six hours without snow since we | firs got here and we dont know how long | the rugged weather will last and if we | should waite here for good weather for | uncertainties we should be late to | the North we come to a conclusion to | put away in th gale for the North | at 5 Am saw a number hare seals around the ship | the passage between the Islands are | blocked up with the field Ice it was | Clouday most of the it would Clear | off some to a tollerable Clear horizon | at appeared to be more Clear around | the land with the exception of the top of | the mountains we saw a peak of high | land to the westward of the Islands a | long way off the Eastern-ost Island is in | the Lat 66:40 Long 163:40.




Margin sketch from the log book 1 February 1853 entry showing ice conditions experienced. Note the size of the vessel in the central mid-ground.




Margin sketch from the log book 2 February 1853 entry showing the Balleny Islands.

Lat 66:26 Long 163:54

ther 29 to 32
Thursday the 3rd of Feb 1853 | These 24 hours Commences with a gale | from SSE steering N by W under | double reef topsails running through | Icebergs and a great quantity of Ice | that has broken from the large Ice | bergs which makes it rather bad | navigation at 6 Pm bgins to snow | at 8 Pm heavy driving snowstorm | which requires a sharp lookout to | avoid running onto the Ice at 11 Pm | the wind abates some still Continues | to snow heavy and thick so we canot | see but a short Distance at 5 Am lights | up some made more sail at 7 Am | stoped snowing and brakes away, | some sot the maintopgallant sail | at 8 Am sot the fore and mizen top | gallant sail the Ice is geting | quite scattering at 10 Am saw the | last Ice a heavy sea on the | watter is a pale green the watch | imployed in sweeping and shoveling | snow overboard saw finback and a | few humpbacks Saw Albatroses and | Cape pidgeons Mokes and stinkers.
Lat 63:50 South Long 165:35 East

Air (*ther, thr, the, etc.*) and an occasional water temperature is given in Fahrenheit degrees and the time of the sea day reckoned as beginning at noon. The animals mentioned may be identified as:

**Cooper's name: *Linnean name* (vernacular name)**

Albatross: *Diomedea* species, probably *Diomedea exulans* (Wandering albatross)
Cape pidgeon: *Daption capense* (Pintado petrel)
Finback: *Balaenoptera physalis* (Fin whale)
Hare seal: a Phocid, probably *Lobodon carciophagus* (Crabeater seal)
Humpack, humback, and humpback: *Megaptera novaengliae* (Humpback whale)
Ice pidgeon: *Pagodroma nivea* (Snow petrel)
Mokes: *Diomedea* species, probably *Diomedea melanophrys* (Black-browed albatross)
Mothercarrys chicken: *Oceanites oceanicus* (Wilson's storm petrel)
Sea hen: *Procellaria aequinoctialis* (Shoemaker)
Stinkers: *Macronectes giganteus* (Giant petrel)
Sulphur bottoms: *Balenoptera musculus* (Blue whales)

Whalebirds: *Pachyptila desolata* (Dove or Antarctic prion)

The twelve day extract notes ice conditions, which are typical for that region and present a hazard for small vessels. The period from 28 to 30 January was particularly difficult for navigation. The weather was generally unfavorable on 2 February. Cooper notes that no longer than 36 hours without snow was experienced during the southern journey. There are references to shoveling snow overboard — an essential operation as the extra weight has sunk small vessels. Much adjustment of the sails is recorded, accommodating many changes in the wind. There are several notes on the Ice Front (variously, *Icey-bearer* or *bearer*) and the Shore Lead, a zone occurring close to the coast, usually clearer of ice owing to local currents, which was entered on the morning of 26 January (civil date).

The most significant part of the extract, the account of the landing on 26 January (sea date) may be rendered as:

> *...at 11:30 we came up with the barrier, lowered a boat and went to it, and landed on it. We saw a number of penguins about the ice. The ice is here broken into large flakes and driven solidly together, and a number of large icebergs mixed in the barrier along the ice front edge are from 4 to 15 feet* [13 to 4.5 meters] *out of the water, and as it goes back it appears to be at considerable height, there are two or three peaks of mountains a long way off which are very high....*

It describes a landing near noon on 27 January 1853 (civil date) on a small ice shelf, or possibly, on thick fast ice. Several such shelves exist along that coast. The landing may be presumed to have occurred in the vicinity of Cape Adare (71·25°S, 170·25°E). A margin sketch showing the "Coast of the South Continent" accompanies the log entry for 30 January 1853, which effectively represents its mountainous aspect, rising to Mount Minto (4,163 meters).

The Balleny Islands, passed on the way north, are realistically sketched in the margin of the 2 February entry. These are a 190 km chain of three main volcanic, highly glacierized islands discovered by John Balleny in 1839 (*Murray*, 1901). The coasts are precipitous cliffs, rendering them as difficult for access to seals as the sealers — and thus of little interest to either. Sketches clearly show the ice conditions experienced, particularly on 1 February. A crude indication of the course of *Levant* is given on the chart showing the noon positions with a plot joining them.

This voyage is a particularly good example of the largely unknown Antarctic discoveries by the first epoch of sealers (there was also a distinct, mechanized, second epoch which took Elephant Seals for their blubber between 1905 and 1965). The industry extended its range to the Antarctic in 1780 and lasted until 1922 when the last southern sealing voyage returned to New England from Iles Kerguelen (*Headland*, 1989). Many log books have survived; thus, further examination of these, with other sealers records, may reveal similar discoveries. In data from a 1996 unpublished revision of an *Antarctic Chronology* (*Headland*, 1989), the United States Antarctic sealing industry had almost twice the number of voyages (461) as the British one (239) and the largest of the other countries was half the size again (115). Of the records preserved, those from New England are by far the most comprehensive, for which the British practice of requiring the maintenance of formal logs for the customs authorities, and the destruction of these records after 25 years, is responsible. Examining such records is a laborious task, as the writing is often awkward, and their condition frequently demonstrates the adverse circumstances under which the entries were made.

The priority of landing on the continent of Antarctica has been claimed by, or attributed to, several expeditions. Some confusion is apparent. The most common incorrect attribution is to the Norwegian sealing and whaling exploration from Tönsberg led by Henrik Johan Bull aboard *Antarctic* in 1894. The expedition reached Cape Adare and landed on an adjacent morainic spit, later named Ridley Beach, on 24 January 1895. The captain, Leonard Kristensen, claimed to have been first ashore and thus to be "the first

man who ever put foot on South Victoria Land" (*Kristensen*, 1896). Carsten Egeberg Borchgrevink, an assistant biologist, claimed to have been first and thus to be "the first on the Antarctic continent" (*Borchgrevink*, 1896). Alexander G. F. von Tunzleman (a boy recruited in Stewart Island) may, however, have preceded either (*Evans and Jones*, 1975). Henrik Bull indicated no precedence, stating only: "The sensation of being the first man who had set foot on the real Antarctic mainland was both strange and pleasurable..." (*Bull*, 1896). There might have been contemporary justification for the claim of precedence in that, until 1936, there was doubt as to whether the Antarctic Peninsula was archipelagic or part of the continent and the landing by Mercator Cooper was effectively unknown.

*Robert Keith Headland is the Archivist and Curator of the Scott Polar Research Institute, Cambridge, United Kingdom. His research has involved investigation of historical geography and biogeography of both polar regions, particularly of the remote archipelagoes.*

# Acknowledgment

*I would like to thank Mrs. D. T. King of the East Hampton Library, New York, for supplying and giving permission to quote the extract of the logbook.*

# Bibliography

Terrence Edward Armstrong, "Bellingshausen and the Discovery of Antarctica" *Polar Record* 15 (99) [1971], (Cambridge), 887–889.

Kenneth J. Bertrand, *Americans in Antarctica 1775–1948* (New York: American Geographical Society, 1971).

Carsten Egeberg Borchgrevink, "The First Landing on the Antarctic Continent," *Century Illustrated Monthly Magazine*, N.S. 29 [1896], (London), 432–448.

Henrik Johan Bull, *The Cruise of the Antarctic* (London: Edward Arnold, 1896).

James Cook, *A Voyage toward the South Pole and Round the World...* (London: W. Strahan and T. Cadell, 1777).

Mercator Cooper, *Log of Levant, 1851–55* (Unpublished manuscript, East Hampton Library: ms SBG 16). Extract held in Scott Polar Research Institute, Cambridge.

Hugh Blackwell Evans and A. G. E. Jones, "A Forgotten Explorer: Carsten Egeberg Borchgrevink" *Polar Record* 17 (108) [1975], (Cambridge), 221–235.

Robert Keith Headland, *A Chronological List of Antarctic Expeditions and Related Historical Events* (Cambridge: University Press, 1989).

Robert Keith Headland, *Geographical Discoveries in Antarctica by the Whaling Industry* (1993); B. L. Basberg, J. E. Ringstad, E. Wexelsen, eds., *Whaling and History* (Sandefjord: Kommandør Chr. Christensens Hvalfangstmuseum, Publikasjon 29).

A. G. E. Jones, "British Sealing on New South Shetland 1819–1826," *Great Circle*, 7(1) [1985], (Nedlands, Australia), 9–22; 7(2) [1985], 74–87.

Leonard Kristensen, "Journal of the Right-Whaling Cruise of the Norwegian Steamship *Antarctic* in the South Polar Seas," *Transactions of the Royal Geographical Society of Australasia (Victoria Branch)*, 12 and 13 [1896], 73–100.

John Murray, *the Antarctic Manual* (London: Royal Geographical Society, 1901).

Helen Rosenman, ed., *Two Voyages to the South Seas by Capt. J. S. C. Dumont d'Urville...* (Melbourne: University Press, 1887).

James Clark Ross, *A Voyage of Discovery and Research in the Southern and Antarctic Regions during the Years 1839–43* (London: John Murray, 1847).

Edouard A. Stackpole, *The Voyage of the* Huron *and* Huntress (Mystic, CT: Marine Historical Association, 1955).

Edouard A. Stackpole, *Whales and Destiny* (Amherst, MA: University of Massachusetts Press, 1972).

# "Splice the main brace and drink a toast to James L. Nelson....

Sailing in the wake of C.S. Forester, Nelson has done an excellent job of combining historical authenticity with firm characterization and lively action."

—Nathan Miller, author of *Sea of Glory: A Naval History of the American Revolution*

**"Nelson writes with the eagerness of a young man sailing his first command."**
—Patrick O'Brian, author of the Aubrey/Maturin series

Captain Isaac Biddlecomb sets sail for Bermuda on a daring mission to capture a desperately needed cache of gunpowder—not knowing that a traitor has betrayed the plan to the enemy.

POCKET BOOKS

Available in trade paperback wherever books are sold
http://www.SimonSays.com

# Where Did the Mutiny on the *Bounty* Occur?

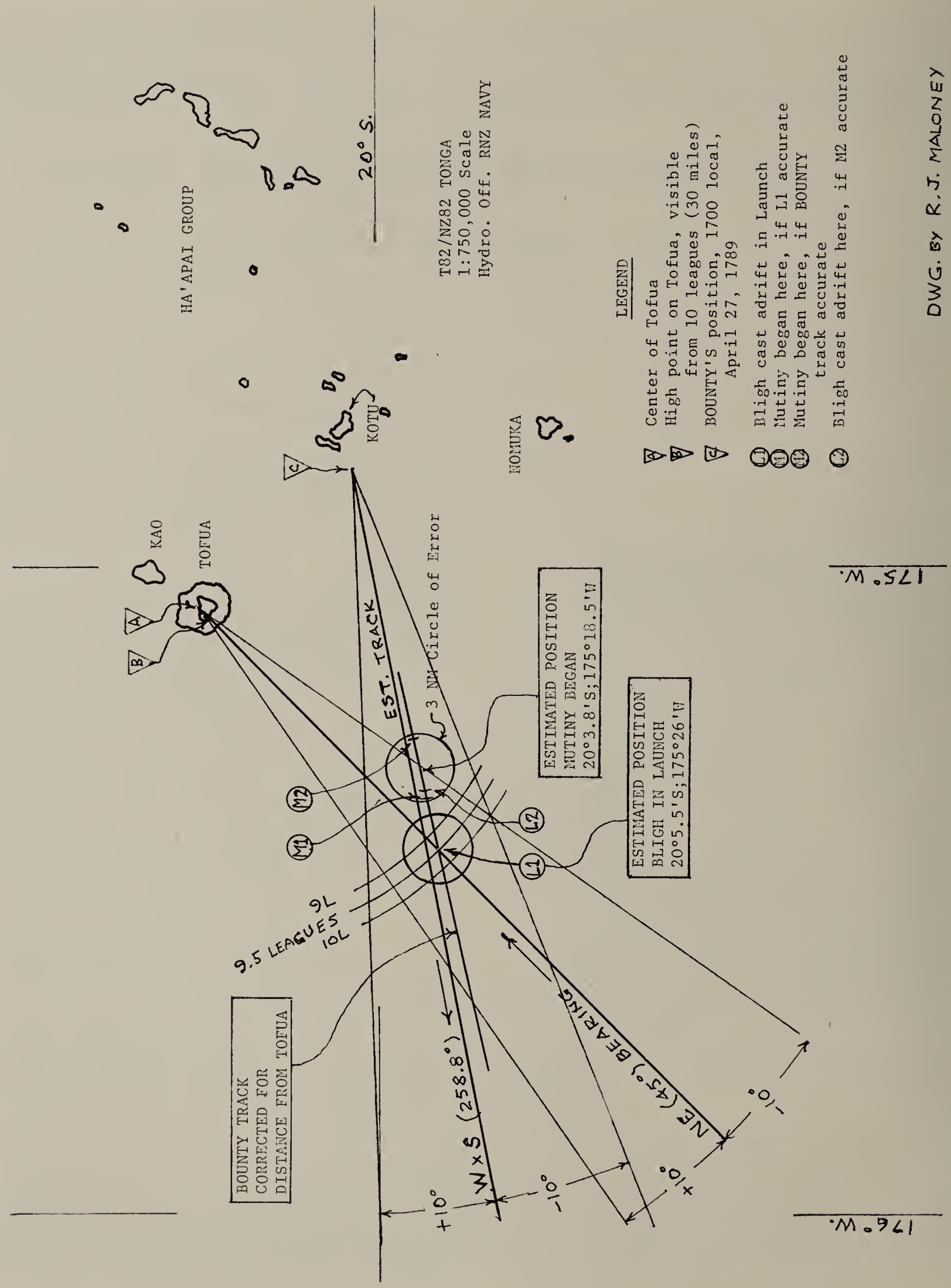
RAYMOND JAMES MALONEY

Just before sunrise," wrote Captain William Bligh of HMS *Bounty*, "Mr. Fletcher Christian, officer of the watch, Charles Churchill, master of arms and ship's corporal, and several others came into my cabbin while I was fast asleep and seizing me...holding naked bayonets to my heart...tyed my hands with a cord...behind my back...assisted by others who were also in the cabbin all armed...and threatened instant death if I made the least noise."

So began the stream of narrative, expository, and analytical writings on the mutiny on the *Bounty* that has lasted to this day, and indeed continues. Every facet of the people involved and the events that occurred have been minutely studied and written about, with one surprising exception: the exact location of the *Bounty* when Fletcher Christian and a handful of the crew mutinied, took the ship, and cast Bligh and eighteen crewmen adrift. Given the emotional turmoil of the mutiny, it is understandable that no one thought to record the geographical position — or, for that matter, even wanted to. Compounding this omission was the uncharacteristic vagueness of Bligh's log for the preceding twenty-four hours. *Bounty* scholars have generally accepted his estimate that "Tofua (one of the Tonga Islands, in the South Pacific) bore Northeast 10 leagues" (30 nautical miles) when he was cast adrift. However, the cast off came at 0800 hours, about two and a half hours after the mutiny began. The *Bounty* was under sail and moving, albeit slowly, and could have traveled several miles.

Few historians appear interested in this little gap in the eventful sequence. Attempts to fix the site of the outbreak of the mutiny seem casual at best and mostly wrong. 19°45' S and 175°05' W has been suggested as the actual site, as well as thirty miles south of Tofua. Neither is accurate. In fact, the coordinates given would put the *Bounty* in the crater lake in the center of Tofua.

As a lifelong *Bounty* buff, and presently doing research for a book on the subject, this lack of information has nagged me for a long time. Coincidentally, Spencer Murray, author of *Pitcairn Island: The First 200 Years* (1992) — an excellent work on *Bounty* history — also believes that the location of the mutiny is a neglected piece of the mystery. Through coast-to-coast long telephone conversations and letters, he and I agreed to at least attempt to pinpoint the location. We also agreed on a method to effect this. We realized that certain assumptions had to be made to fill the voids in what is known of that traumatic morning of 28 April 1789, but we believed that we could create a logical time line of events and ambient conditions that would put us close to fixing *Bounty*'s position at the moment of mutiny *and* when Bligh was cast adrift by using our experience as sailors and *Bounty* scholars. Although I accept responsibility for the plotting work and this article, it is the result of our joint thoughts. The chart used was T82/NZ82 Tonga, prepared by the Hydrographic Office of the Royal New Zealand Navy.




Navigation plot to establish *Bounty*'s position, when: 1) the mutiny began, and 2) Captain Bligh and eighteen crewmen were cast adrift in a 23' launch. Bligh then sailed 3,600 miles to Timor Island in the Dutch East Indies.

Since source records are more specific concerning the point at which Bligh was first cast adrift, I began by plotting that point first, even though it marked the end of the mutiny, to establish a reference for later plotting. Captain Bligh (actually a lieutenant in rank) recorded several times that when he was cast adrift, the island of Tofua bore northeast ten leagues. James Morrison, *Bounty*'s boatswain's mate, wrote in his journal that the time was 8:00 a.m. on 28 April 1789, and that Tofua bore northeast eight or nine leagues. I averaged the distance to 9.5 leagues, biasing slightly toward Bligh's estimate. Regarding the northeast bearing, I accepted it as a more accurate estimate. Contrary to the modern practice of using numerical designations for compass directions and northeast, east, or south for general directions, eighteenth century mariners, including the Royal Navy, used the 32-point compass designations as specific directions and courses, *e.g.*, east northeast by ¼ east, or southwest by west. With this in mind, it can be assumed that both Bligh's and Morrison's indications that Tofua bore northeast was not just a general direction, but a particular bearing. Granted, they were probably quick estimates, but they were made by experienced mariners accustomed to making such estimates. Additionally — and more probably — Bligh's statement was based on fact, inasmuch as Christian had allowed him a compass in the launch. He would have certainly checked his compass as soon as they were cast off and taken a bearing on Tofua.

Referring to the plot, the northeast (45°) bearing is shown, drawn to point A centered on Tofua. The 9.5 league distance estimate is drawn from point B, which represents the high point on Tofua that would have been visible from approximately thirty miles away, to point L1, establishing the position for the *Bounty* when Bligh was cast off. As a check on the viability of L1, and to establish the point at which the mutiny began, it was necessary to attempt to recreate the track of the *Bounty* the preceding night and day from the last navigational coordinates recorded by Bligh. At noon on 27 April, he wrote:

> *For the night I steered to the Northward (from Nomuka) and at noon we were between Tofua and Kotu, Latitude observed 19°58'S.*

Unfortunately, he did not record his longitude, probably planning to do the arithmetic later. That evening, he wrote:

> *I kept near Kotu until 5 o'clock this afternoon in hopes to have had some canoes come off but I saw none. I therefore directed my course to the West and went to the Southward of Tofua.*

A necessary assumption I made here was that in an effort to lure natives out to trade for fresh fruit and vegetables, Bligh would have kept the *Bounty* fairly close to Kotu. I estimated three miles off Kotu as a reasonable distance, taking into account the lack of accurate soundings on the Royal Navy charts of the time. The "light Easterly Winds" that afternoon had the *Bounty* moving at little more than drifting speed. Morrison wrote:

> *Weather continued the same all day...we altered our position very little, being within 7 or 8 leagues of Tofua all day, with no appearance of breeze.*

Considering such weather inputs and Bligh's remarks, I placed the *Bounty* at point C at 5:00 p.m. on 27 April, 19°58'S and 174°51'W. It was now necessary to determine the *Bounty*'s track from that point to the morning of 28 April when, "just before sunrise," the mutineers tore Bligh out of bed in his nightshirt. They were heading west from Point C; however, a southwestward set current does exist in this area. The *Times Atlas of the Oceans* (1983) indicates that April/May currents average northeast to southwest, less than 0.5 knots. The Tonga chart reads:

> *The South Sub-Tropical Current predominates all over the chart, with generally West to Southwesterly sets of up to 1 knot. Sets are however variable (depending on the island coasts) and influenced by the wind.*

It can be assumed reasonably that the *Bounty*'s drift would cause an average track of west southwest (247.5°), but with the ship heading west (270°), the actual track over the bottom would average west by south (258.8°). This can be called the "Estimated *Bounty* Track." While my assumptions here may be argued, the resulting track comes surprisingly close to Point L1 when it crosses the northeast (45°) bearing line at exactly nine leagues from Tofua. I then adjusted the Estimated *Bounty* Track to intersect L1, the 9.5 league distance from Tofua, and drew a Corrected *Bounty* Track, which is approximately one mile from the Estimated Track.

The Corrected Track also coincides exactly with the result of set and drift computations. To determine the point along the Corrected Track where the mutiny began, a simple time/distance calculation sufficed, but it was first necessary to establish a time for the start of the mutiny and the *Bounty*'s speed over the bottom.

To pinpoint sunrise on 28 April 1789 in the Tonga Islands, we were fortunate in enlisting the services of Walter Bersinger, a friend of Spencer Murray's who is an astronomer and computer expert living in Zurich, Switzerland. Bersinger, with appropriate software, was able to establish the exact time. At dawn on 28 April 1798, longitude 175°15'W, the upper limb (top) of the sun touched the horizon at 5:56 a.m. local time; the lower limb (bottom) of the sun lifted off the horizon at 5:58.25. I used 5:57 a.m. as dawn and set "just before sunrise" as fifteen minutes earlier, at 5:42. Elapsed time from 5:00 p.m. on 27 April — Point C — where the *Bounty* was west of Kotu, to 5:42 a.m. on 28 April is twelve hours and 42 minutes.

Determining the true speed of the *Bounty* in the ambient conditions of the evening and night of 27/28 April required another assumption. The log at other times showed her speed at 2 to 3 knots in "light, variable winds." However, Morrison's journal indicates "the night being calm, we made no way." A reasonable assumed speed would be 1 to 1.5 knots. Had she traveled any slower, she would lose steerage way and perhaps be noted in the log, which did not happen. Having sailed a number of times on the *Bounty* replica (built for the Marlon Brando film version), including hours at the helm under sail and docking, it was my opinion that 1.5 knots would be the minimum speed the *Bounty* could move and remain steerable. With less speed, she would have no rudder control. An informal survey of several experienced *Bounty* sailors, including Richard Bailey, part time captain of the *Bounty* and full time captain of HMS *Rose*, Spencer Murray, and Jeff Finston, full time *Bounty* first mate, all agree that 1.5 knots is about right for the conditions reported. Thus, a 1.5 knot speed through the water and a 0.5 knot southwestward current would give the *Bounty* a 2 knot speed over the bottom. Multiplying the elapsed time, 12 hours and 42 minutes, by a 2-knot speed over the bottom gives us a distance traveled of 25.4 miles. Plotting this distance along the Corrected Track gives us Point M2, the start of the mutiny. Set and drift calculations put the fix one mile east, close enough to be considered within plotting tolerances. Adding the two hours eighteen minutes from 5:42 to 8:00 a.m. along the track gives us Point L2, where Bligh was cast adrift. As a check, I also counted back in time from L1, 8:00 to 5:42 a.m. along the Corrected Track to set M1 as the mutiny start point.

Although M1 and M2 do not exactly coincide, they are within a three mile radius circle of error (COE), the center of which can be called the Estimated Position where the mutiny began, 20°3.8'S, 175°18.5'W. The Estimated Position L1 where Bligh went into the launch, centered on a three mile COE would be 20°5.5'S, 175°26'W.

The L1 position is favored over L2 as being more accurate, since it is based on original source information, *i.e.*, Bligh's and Morrison's, whereas L2 is derived from assumptions, however reasonable they may be.

I would have liked M1 and M2 to be closer together. If the *Bounty* had been more than three miles off Kotu, Point C would be further west and M2 would be closer to M1. If the *Bounty*'s speed was slightly faster than I assumed, or the set of the current slightly more westward, or if Bligh was pulled out of his bunk only five or ten minutes before sunrise instead of my estimated fifteen, the two points would be closer. However, my objective was to fix the geographical point of

the mutiny by using all known facts and bridging the gaps with reasoned, knowledgeable assumptions without slanting the results in any way. If the point had not proven logical, I would have discarded my work. Fortunately, my recreation of the movement of the *Bounty* and the time/distance calculations put the two points where the mutiny began close enough to be within the three mile radius circle of error.

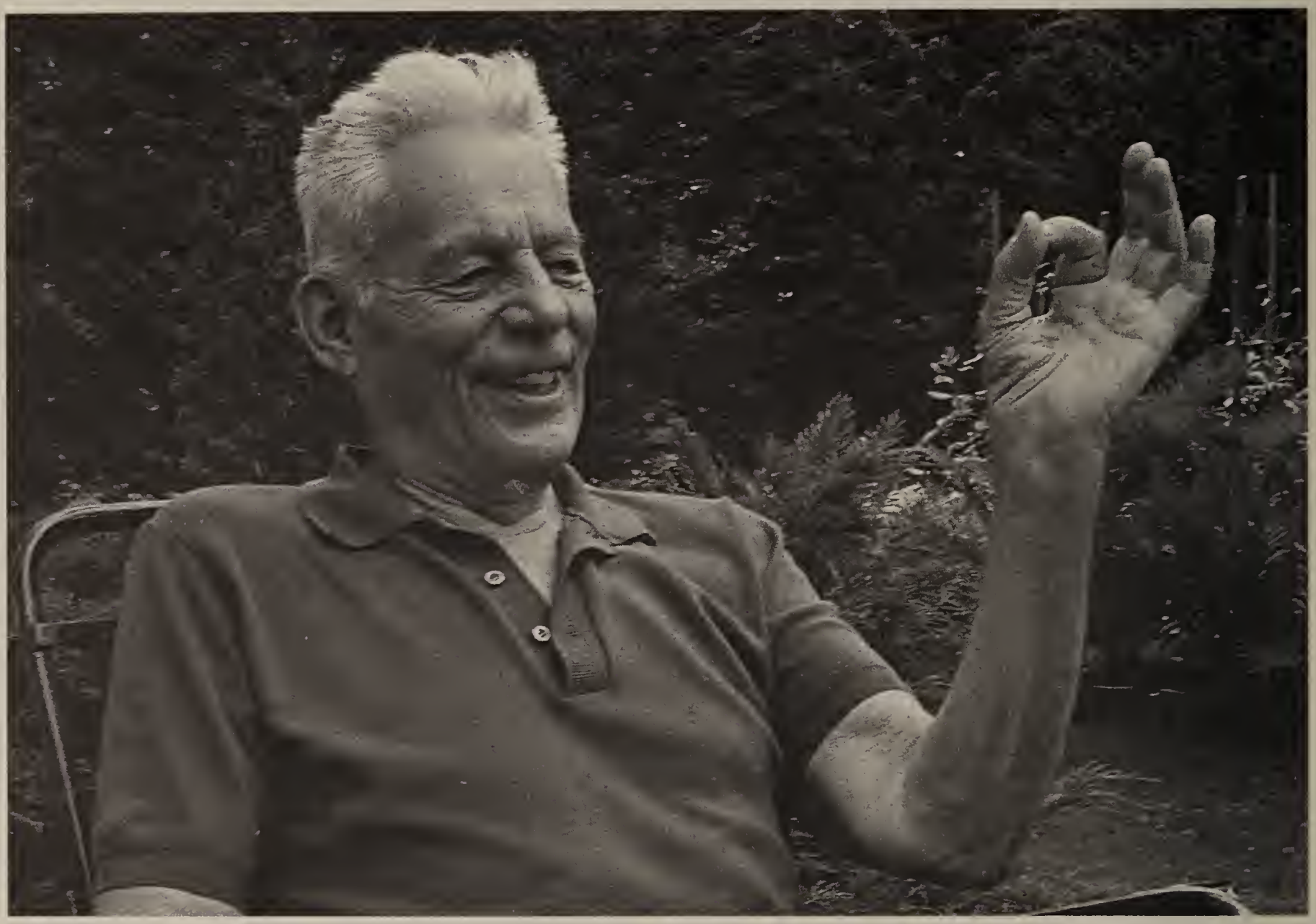
I should admit that one troubling anomaly exists to these calculations. One source document, the result of interviewing several *Bounty* crewmen after the court martial, indicates that the mutiny began at 5:00 a.m., and that it was between three and four hours before Bligh was cast adrift. Obviously, 5:00 and my estimate of 5:42 do not coincide. My estimate was based on a computer generated sunrise time of 5:57 and Bligh's now famous statement, "Just before sunrise." I cannot dispute the crewmen, except to say that personal pocket watches were a rarity among working seamen of that time and their statements were taken five years after the mutiny. Regarding their reckoning of three or four hours, their court martial estimates under oath ranged from two to four hours. Other indications, such as the time needed to lower boats, etc., favor three hours or less. Also, Morrison's journal indicates Bligh was cast off "about" 8:00 a.m., making even that reference uncertain.

Fortunately, the slow speed of the *Bounty* during those momentous hours allows for a certain tolerance in time line events. The ship was moving at about 100' per minute. In the worst case, if the mutiny did begin at 5:00 — which does not seem possible given the L1 fix — then M2 would be 1.4 miles to the east, or about 0.7 miles outside my COE. Given such forgiving circumstances, I am comfortable with the proposed three mile COE.

For those readers still with me, I am prepared to defend my assumptions, but I welcome any suggestions or ideas that would contribute to a more accurate solution. One of my purposes in writing this was the hope that more experienced and knowledgeable historians and navigators than I would be interested enough to examine this renowned moment in maritime history.

*Raymond James Maloney, a graduate of Yale University and Cambridge Institute for Business Management, has had a lifelong love affair with the epic adventure of the* Bounty. *As a boy, he devoured the Nordhoff and Hall novels, built several models of the famous ship, and, of course, saw the Charles Laughton film many times. He is now involved in research for a book on the* Bounty, *which has led him to libraries and museums from England to Australia, and to the South Pacific islands of* Bounty *fame. Born in New York City, he resides in Milford, Connecticut.*

# The Francis B. Lothrop, Jr. 1996 Awards



The Peabody Essex Museum announces a new set of awards for 1996. To encourage authors to explore the varied aspects of maritime history and arts, there will be two new awards in addition to that for Best Article published in 1996:

- A prize for the best manuscript accepted for publication in the field of maritime arts.
- A prize for the best manuscript accepted for publication in the field of maritime modeling (in the words of our founders, *why* we make them, not *how*).

Winners will be announced in Volume 57, No. 1 of *The American Neptune*. For a copy of the authors' guidelines, please contact the Publications Department, Peabody Essex Museum, East India Square, Salem, M 01970-3783, call (508) 745-1876, ext. 3172, or E-mail dori_phillips@pem.org.

# News

## Naval Dockyards Society

The inaugural meeting of the Naval Dockyards Society, organized by Ann Coats and Philip MacDougall with the support of the National Maritime Museum, took place at Greenwich on Saturday, 14 September. About forty people listened to three papers on the theme "Sabotage is Suspected." A discussion concerning the future structure and role of the Society followed. From this emerged a desire that these needed to be defined more precisely, so a proposal was made and accepted that elections for Secretary, Chair, Treasurer, and Newsletter Editor be held at the next meeting in March 1997 in order to formally establish the Society, and that an annual subscription of $10 be a condition of joining. For other arrangements, please contact us. A vote will also be taken at the meeting to decide whether the Society should become in some way affiliated to the SNR or remain a separate society, and a constitution will be discussed and voted upon.

Future suggestions for talks include short work-in-progress papers to demonstrate current research, the effectiveness of Pepys as a dockyard administrator, dockyard personnel, shipbuilding techniques, and particular dockyards. Visits to the Public Record Office and the National Maritime Museum for a display of relevant materials on dockyards, sites of former dockyards at Depford and Woolwich and the Commissioners' church, and the Admiralty Board Room were suggested. Long-term objectives of compiling a comprehensive bibliography, a worldwide database of dockyards and associated structures, their current status and future prospects, and the best way of passing on the vast potential of oral history of the dockyards were also discussed.

The date of the next meeting will be Saturday 1 March 1997 at the National Maritime Museum, Greenwich. If anyone is interested in joining, please contact Ann Coats, Secretary, Naval Dockyards Society, c/o National Maritime Museum, Greenwich SE10 9NF, (011) 44 1705 787 263.

## National Maritime Museum Celebrates Nelson's Birthday with the Launch of a World Wide Website

Sunday 29 September 1996 marked the anniversary of the birth of Britain's greatest naval hero, Horatio Nelson, whose life and career is celebrated in the National Maritime Museum's current exhibition, "Nelson." To coincide with this important date in the maritime year, the Museum has launched its brand new World Wide Website on the Internet.

The Museum website has been planned to cover all of its famous building in Greenwich: the Museum, the Old Royal Observatory (home of world time and the Prime Meridian), and Indigo Jones' magnificent seventeenth century Queen's House. The website will reflect the current exhibitions, displays, and other activities. It will also contain the latest information on the remarkable changes currently underway at the Museum in time for the millennium, which begins officially for the world on the Prime Meridian at the Old Royal Observatory. The site will also cover educational programs for children, adults, and schools, the history of the buildings, the unrivaled maritime collections, and the full range of the Museum's research and commercial services. Press releases and media statements will also be available the moment

they are released.

Inquiries and comments about the website should be directed to the Internet Editor, Kathy Donoghue on +44 (0) 181-312 6722. E-mail: kathy@dial.pipex.com. For further press information, please telephone Michael Barrett or Sandie Mead on +44 (0) 181-312 6745/6790 or fax +44 (0) 181-312 6521.

# Exhibitions

## Recent Acquisitions

The Peabody Essex Museum in Salem opens a new exhibition entitled "Prize Goods: Maritime Art and Artifacts Captured for the Collection" on 21 February 1997. The exhibit features recent acquisitions made by the museum during the last five years which have not yet been on public view. Objects exhibited include the only known surviving figurehead carved by the famous Skillin family of early American shipcarvers, a gold-and-enamel mourning ring paid for by Nelson's estate to be worn by official mourners and pallbearers at his funeral, early nineteenth century watercolors of Hawaii and Pitcairn Island, as well as pictures by William Bradford, Antoine Roux, Charles Brooking and Frans Solvyns. The exhibit will run through the end of 1997.

## Lighthouses, Figureheads, and Photographs

An exhibition at the Mariners' Museum in Newport News, Virginia, entitled "Lighthouses and Keepers," which documents the historical role and evolution of lighthouses in photographs, artifacts, and models, will run through April 27, 1997. "The Art of the Shipcarver" includes more than forty European and American figureheads and nautical carvings, and will be open until 13 July 1997. Opening 10 April 1997 is "Sun Ships: Photographs of Barry Winiker," featuring photographs of cruise ships that raise naval architecture to a technological art form.

# Symposia

## Admiral Lord Anson's Tercentenary

The Anson Society plans to commemorate the tercentenary of the birth of the famous British naval officer, circumnavigator and administrator Lord Anson with an exhibition and international seminar to be held 19 April 1997 at Carshalton House in the London borough of Sutton. Invited speakers include N. A. M. Rodger, Brian Lavery, and Daniel Baugh. Tickets for the seminar and/or the evening soiree are available from Mr. Eddy Keough, Executive Secretary, The Anson Society, 3 Maxwell Road, Arundel, West Sussex BN18 9EU, telephone 01903-882058.

## Naval History

The Department of History of the United States Naval Academy will host the thirteenth Naval History Symposium, 5–7 October 1997 in Annapolis, Maryland. In keeping with tradition, there is no central theme; there is likely to be a wide range of naval topics extending across broad temporal and cultural ranges. Contact William M. McBride, Department of History, US Naval Academy, Annapolis, MD 21402-5044 for more information.

## Maritime Mission

The Fifth International Maritime Mission Conference will be held April 12-15, 1999 in Antwerp, Belgium. The topic will be "Seafarers in the twenty-first Century." Proposals for papers and requests for information should be sent to Stephen Friend, Department of Theology, Cultural and Religious Studies, University of Ripon & York St John, Lord Mayor's Walk, York YO3 7EX, UK.

## Music of the Sea

As part of their Sea Music Festival, Mystic Seaport Museum will hold their eighteenth

annual Sea Music Symposium, 6–8 June 1997. Papers will come from the disciplines of history, folklore, literature and ethnology and must address some aspect of music of verse of the sea in the age of sail or pre-World War II steam navigation. Deadline for submission of proposals is 1 March 1997, and should be sent to Sea Music Symposium, Mystic Seaport Museum, 75 Greenmanville Avenue, PO Box 6000, mystic, CT 06355-0990.

### Nautical Research Guild

USS *Constitution* Model Shipwright Guild of New England will host the 24th Annual Conference of the Nautical Research Guild from 31 October to 2 November 1997. The conference is coordinated with the Bicentennial celebration of the launching of the USS *Constitution*. For more information, contact George Kaiser, 23 Mermaid Avenue, Winthrop, MA 02152.

### Whaling and Scrimshaw

The Kendall Whaling Museum will host the sixth Scrimshaw Collectors' Weekend 20–22 June 1997 in Sharon, Massachusetts. Speakers will include William Gilkerson, Ronald Bourgeault, and Curtis Nyquist. For more information, call the museum at (617) 784-5642.

### Research Fellowship

Mystic Seaport offers the Paul Cuffe Memorial Fellowship annually for the study of minorities in American maritime history. Fellowships of up to $2,400 are offered to encourage research that considers the participation of Native and African Americans in the maritime activities or New England, primarily its southeastern shores. Fellowships support research and writing, a portion of which should be conducted in the Mystic area. Application deadline is 15 June. For more information, contact the Director, Munson Institute, Mystic Seaport, PO Box 6000, 75 Greenmanville Avenue, Mystic, CT 06355-0990.

# Readers' Forum

### Issue of *The American Neptune* needed

If you have a spare copy of Volume 47, No. 1 (Winter 1987), would you please send it to the Editor-in-Chief, Barry Gough, History Department, Wilfrid Laurier University, Waterloo ON N2L 3C5.

### *Neptune* Editor Lauded

*The American Neptune* maritime arts and news editor Daniel Finamore, the Russell W. Knight curator of maritime art and history at the Peabody Essex Museum in Salem, received the 1996 Doctoral Dissertation Award from the Society for American Archaeology. Given for outstanding recent dissertations, it was presented to Dr. Finamore for his work entitled "Sailors and Slaves on the Wood-cutting Frontier: Archaeology of the British Bay Settlement, Belize."

### Mr. Taylor's Legacy

In my many years as member of the editorial advisory board of *The American Neptune*, I learned of an interesting approach to doing what could be a comprehensive article on an important subject for publication. It came about this way:

D. Foster Taylor of Quincy, Massachusetts, a charter member of the advisory board of *The Neptune* and a student of maritime history, became deeply involved in the work of John Peck, born in Boston in 1725 and regarded as America's first marine architect. Foster worked several years on the project, but was interrupted by World War II when his foundry businesses occupied most of his time. One night, Walter

Whitehill, Foster, and I were chatting after a meeting at the Peabody Museum, and Walter asked Foster about the status of his John Peck research. Foster said it was moving along, but he wanted to lean up some details. Walter said, "Foster, you know a damned sight more about John Peck thank any living American. You should write what you have now, because if you wait until you have ever little detail complete, you may never get a chance to put the present data on paper.

These words by Walter bore more truth than he realized. Soon after they were spoken, Foster became fatally ill with leukemia. It was my sad task, at the request of his widow, to clean out Foster's marine library; his pride and joy, at his new home in Quincy. I searched first for the John Peck papers and found the extensive pile of documents, which I put together and delivered to Ernest Dodge (who was then Managing Editor of *The American Neptune*) at the Peabody Museum, along with many of Foster's books I thought the museum should have.

So, Walter was correct in his prediction. I learned that a research project of this nature and magnitude would be committed to type as soon as most data is in a useful form.

JOHN R. HERBERT
Spring Hill, Florida

SHIP MODELS
SINCE 1975

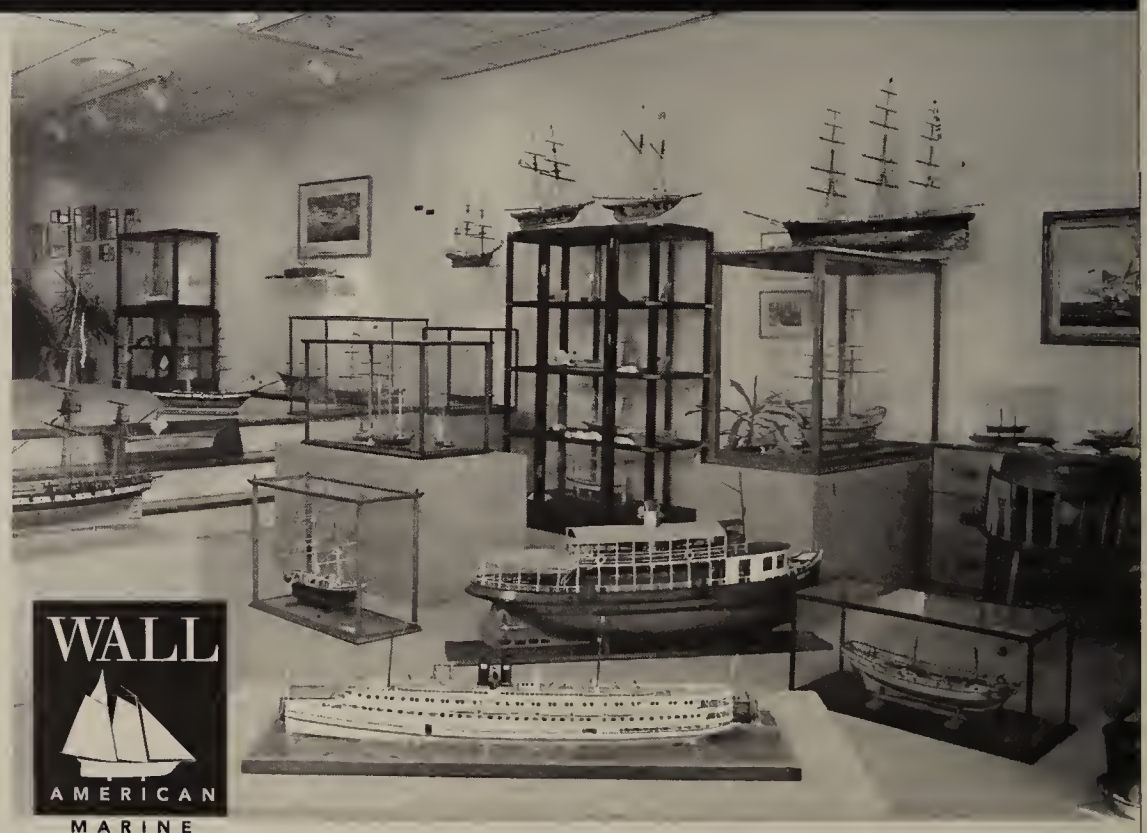
★

Offering a wide selection of fully documented, one of a kind ship models produced by the world's finest professional marine model artists.
*Also available:* custom built models of yachts and historical ships, appraisals, restorations, display cases and lighting.

***Member:***
*International Society of Appraisers* associate
*International Congress of Maritime Museums*
*U.S. Nautical Research Guild*
*Society for Historical Archaeology*

Visit our gallery
*(appointment preferred).*
Catalog $10.00
or free color brochure.

*R. Michael Wall, Director*



WALL
AMERICAN
MARINE
MODEL
GALLERY

*DEPT.AN* 12 DERBY SQUARE, SALEM, MA 01970, USA * FAX:508-745-5778 * 508-745-5777

# Book Reviews

IAN FRIEL, *The Good Ship, Shipbuilding and Technology in England 1200–1520* (Baltimore: Johns Hopkins University Press, 1995). 208 pages, 71 illustrations, bibliography, index. Hardcover. ISBN 0-8018-5202-1. $35.95.

England offers the maritime historian an unparalleled opportunity to investigate the ships and shipping of the Middle Ages by virtue of the extensive collections of customs, financial, and administrative documents held by the Public Record Office. These record the construction, maintenance, sale, capture, comings, and goings of large numbers of ships, both English and foreign, for a critical period in the development of northern European society. Yet the sheer magnitude of the raw material is daunting. Earlier studies have quantified the data concerning commodities exported from English ports, and several continental scholars have combed the PRO for references to ships and commerce relevant to their own countries, but many of these works have been either undigested presentations of primary data or very specific studies of particular ports, regions, or commodities.

In *The Good Ship*, Ian Friel has combined the different sorts of information provided by the documents to produce a wide-ranging, detailed picture of late medieval English ships and shipbuilding. The topic is approached broadly and methodically, with chapters devoted to the nature of the evidence, ship types and crews, materials and the construction process, ship structure, propulsion, life aboard, merchant ships, warships, changes in construction and rig, and early approaches to Atlantic exploration. Each detailed chapter contains both comprehensive analysis and anecdotes. Although there is perhaps not enough of the former to provide a convincing picture of general trends, the wealth of the latter is what gives the book its greatest value, as a detailed collection of individual ships, builders, owners, and sailors surface briefly from obscurity. Everything and everyone seems to be here, from the earliest glass windows in ships (a yacht built for Henry VIII in 1519) to a woman employed (as servant to a pair of painters) in a Lancastrian shipyard.

The largely anecdotal style of presentation does have its drawbacks; while many aspects of ships and the people directly associated with them are treated thoroughly, the role of ships and shipping in the culture as a whole is often neglected. This is rather a traditional approach to European ship studies, but it is regrettable that after sixteen years, Richard Unger's *The Ship in the Medieval Economy 600–1600* (1980) remains a lonely example of the integration of medieval maritime history with broader economic and demographic research. The anecdotal style also leads to a certain amount of difficulty of the researcher trying to use the book as a guide to the sources. The reference format, which often combines all of the citations for each paragraph into a single endnote, makes it very difficult to trace the particular reference for a specific point made in the text.

Although Friel includes iconography and archaeology among his sources, his approach is primarily historical. Although this makes the book extremely valuable for archaeologists who are less familiar with the documents, I, also an archaeologist, feel that the ship finds are dismissed a little too peremptorily, and that a truly comprehensive survey of medieval English ships, as opposed to a survey of documents concerning ships, must at least attempt to reconcile all the data. In a similar vein, the iconography evidence is treated too superficially and uncritically. This material, which ranges from detailed paintings, drawings, and woodcuts to small, crude graffiti and stylized representations on coins and seals, is notoriously difficult to use reliably, as Friel notes, and requires fairly specialized art-historical knowledge as well as familiarity with the subject matter for useful analysis.

A final problem with the text lies in the technical nature of the subject matter. In order to make maximum use of the building and maintenance accounts which Friel brings so vividly to life, a fair degree of familiarity with the practicalities of shipbuilding is required. His treatment of certain issues, particularly the transition from clinker to caravel construction, is based on assumptions that suggest his experience is theoretical rather than practical. For example, on page 66, he indicates that caravel ships can be built by a less skilled workforce than clinker ships, as the fitting of planks is a critical process in the construction of clinker hulls, while in caravel technique it is only the shaping of frames that requires specialized knowledge, and planking can be done by relatively unskilled labor. This statement assumes that caravel planks do not have to be carefully fitted to each other, as in a clinker hull. In reality, caravel planking must be carefully fitted or it will be impossible to make the hull watertight. It is difficult to say, based merely on analysis of the task, whether clinker or caravel construction requires more skill, just as it is pointless to debate whether one technique is "easier" than the other without firsthand, practical experience with both techniques; it is probably more useful to look at amounts of labor. In this regard, caravel construction offers savings in both materials and labor over clinker, and the economic advantage of the new technology must have played an important role in its rapid adoption by northern European shipwrights.

Despite these relatively minor failings, this work is a mine of useful information for any scholar working on late medieval shipping, and it has already found a place among the required readings in the medieval maritime courses taught in our department.

FREDERICK M. HOCKER
Texas A&M University
College Station, Texas

RICHARD HARDING, *The Evolution of the Sailing Navy, 1509–1815* (St. Martin's Press: New York, 1995). 180 pages, 12 drawings, 7 ship plans, 2 sail plans, 5 maps, appendices, end notes, index. Cloth, 6½" x 5¾". ISBN 0-312-12407-4. $39.95.

The key word in the title of this book is "Evolution." The importance of England's Royal Navy over three centuries is one of gradual development from its original state to its eventual dominant role. Richard Harding, principal lecturer at the University of Westminster, discusses this growth through the major periods of Britain's political, economic, diplomatic, and social history. In effect, the book is a historiography — an examination and study of writings pertaining to this subject.

The book is part of the *British History in Perspective* series, one of more than twenty titles by various authors. The books within the series cover foreign policy, politics, periods of crisis, and are quite limited in the time frames covered. Mr. Harding covers one of the longest time frames in a single volume in the series. While not an illustrated chronology of naval architecture, the book chronicles changes in design, construction, armament, and operations of the Royal Navy as parts of the control and administration of this major element of the total British power structure. The gradual evolvement of the relationships between trade and commerce, the Royal family and Parliament, the economics of providing funding, and competitive struggles for control of this force dominate this sweep through three hundred years.

Mr. Harding begins his account of this evolution in the sixteenth century with Henry VIII. He prefaces his explanation with the transition from oared galleys to square rigged ships used for both merchant trading and as warships. Henry VIII initiated a naval force that would become a permanent part of royal power. He expanded the fleet by eighty-four ships, forty-six of which were built specifically for his royal prestige. He initiated an administrative arm devoted to the production of British cannons. This administrative seed would, through the centuries, lead to expansion of Boards and evolve into a formal and professional structure with varying degrees of success.

Historians often view the embroilment with Spain and its Armada as the true starting point of

the Royal Navy. England's ability at this juncture to mobilize rapidly merchant ships and deploy Royal ships provided the keys to the success of 1588. A third force, that of adventurers' ships, including Sir Francis Drake's, also resulted in this victory.

The consistent struggle between Parliament and the king over control of the Navy prevails throughout the book. The costs involved in establishing and maintaining fleet strength, the increased political power of the rising British merchant class in Parliament, and the growing influence of sea power in the field of diplomacy all led, by the early 1700s, to the Navy becoming a major political factor. While the Navy could exert considerable diplomatic pressure around the periphery of Europe, the absence of large ground forces within Europe's borders did limit this role. However, as a defensive force, the Navy became a major ingredient in British military thinking.

When Mr. Harding reaches the eighteenth century and the Seven Years' War, American readers will be on more familiar ground. The subsequent events and time phases will fall neatly into the ready grasp of most readers. The primary value to American readers of this book will be as an entryway into the sequential periods which witnessed the ebbs and flows of the evolution of the island's maritime power. Mr. Harding discusses many authors, their works, and gives the reader evaluations of their worth. Such comments are found not only in the main text, but also in the endnotes. As such, they become a major part of this study. Not only does Mr. Harding highlight the value of his references, he also points out episodes and incidents which warrant further review and analysis. The true value of the book lies in this vein of reference.

A bibliography, segmented by historic periods, identifies published works. Of interest is the fact that many of these works are post World War II. Harding also points out that many of his citations are articles written in professional journals (see Daniel A. Baugh, "The Politics of British Naval Failure, 1775–1777," *The American Neptune*, volume 52, no. 4, Fall 1992). American readers will also recognize the names of Paul Kennedy, Brian Lavery, Robert Gardiner, and N. A. M. Rodger.

RICHARD EDDY

Tallahassee, Florida

ROBERT S. WEDDLE, *Changing Tides: Twilight and Dawn in the Spanish Sea, 1763–1803* (College Station, Texas: Texas A&M University Press, 1995). 384 pages. $49.50.

Does a sea have a history? If so, how can we take the measure of it? The great French historian Fernand Braudel offered one possible avenue in his magisterial history of the Mediterranean, published first in Paris in 1979. To Braudel, the history of the Mediterranean basin had three distinct — but overlapping — levels. The first consisted of the environment itself (*structures*). On a second level, humans had constructed their societies and economies (*conjonctures*), phenomena that lasted longer than any individual. On a third level, men and women played an active role in shaping the events (*événements*) of their age. Examination of only one of these levels led, he argued, to only partial understanding. A historian who studied only politics or economics would miss an opportunity to understand the entire picture, and thus would be unable to write an *histoire totale* of the area. To Braudel and his followers, total history was difficult to achieve — perhaps impossible — but it was the most important type of history to attempt.

Robert S. Weddle, in his informative history of the Spanish Sea — known to us as the Gulf of Mexico — has taken a very different approach. Though he, like Braudel, has spent an enormous amount of energy generating an account of a sea, he has focused on what would have been only the third part of Braudel's agenda: the realm of politics and the circulation of ideas that influenced political goals. This is not to suggest that Weddle's research is limited, for that is far from the case. Weddle has done extensive research on both sides of the Atlantic to write the third volume of a trilogy on the history of the Gulf.

The first two books of the trilogy — *Spanish Sea: The Gulf of Mexico on North America*

*Discovery, 1500–1685* (1985) and *The French Thorn: Rival Explorers in the Spanish Sea, 1682–1762* (1991) — looked at change over long periods of time. Here Weddle concentrates on the period from the end of the Seven Years' War to the transfer of Louisiana from the French to the United States in 1803, paying particular attention to the journeys of explorers bent on revealing the treasures of unexplored territory to eager audiences in Europe and, after the Revolution, along the east coast of the United States. One of Weddle's strengths is the attention he pays to the complexity of this age. The Spanish wanted to retain control over the South Sea, but, as Weddle shows, the growth of British power after the defeat of the French in 1763 proved destabilizing; when rebels won the Revolution, the government of their new nation continued to express an interest in the Gulf and the lands surrounding it. Weddle spends considerable time discussing the importance of Louisiana, seeing in the history of that dominion and its shift in ownership a vital component of the larger story. The Spanish controlled the Gulf in 1763. By the age of Jefferson, the United States, already in possession of Florida, emerged as the dominant, even hegemonic, power in much of the region.

Weddle has decided to tell the Gulf's history in seventeen short chapters. The chronology, evident within discrete chapters, is not clear throughout the book. Although that strategy perhaps reinforces the idea that the region's history cannot be compressed into a single narrative strand, it may also confuse readers, even those who may be familiar with the history of either British America or New Spain during the late eighteenth century. Weddle must have feared such confusion, or at least was aware of the possibility, since he ends four parts of the book with brief concluding sections.

Although the chronological focus is not always clear, Weddle injects his account with useful anecdotes. Readers will certainly appreciate his description of the volcanic eruption of 1793 that terrified inhabitants of Veracruz and sent some into churches seeking God's help in what seemed to be the end of the universe. Most important, Weddle provides a context for understanding the work of explorers such as George Gauld and Philip Pittman. He shows why they went where they did and how their findings facilitated the strategic goals of the European sponsors of their missions.

*Changing Tides* will appeal to readers interested in the Gulf and in individual struggles to command the territories along its shores. Although there is some material here about Native American communities, Weddle provides much less information on these peoples than historians such as Daniel Usner, Jr. and David Weber. There is also precious little here about the environment itself, and not much about the types of communities that developed in the region. This is, then, not an *histoire totale* of a sea and the people who lived near it, but, instead, a history of the politics and strategic jousting that encouraged exploration and determined the ownership of the land surrounding the Gulf.

PETER C. MANCALL

University of Kansas
Lawrence, Kansas

DAVID HANCOCK, *Citizens of the World: London Merchants and the Integration of the British Atlantic Community, 1735–1785* (Cambridge, UK: Cambridge University Press, 1995). xxiii + 477 pages, tables, graphs, illustrations, index. Hardcover. ISBN 0-521-47430-2. $59.95.

Bance Island, fifteen miles up the Sierra Leone River, consists of a deserted site which was bought in 1748 as a slave trading base by a group of merchants whose activities form the substance of this wide-ranging study of English mercantile enterprise in the half century between 1735 and 1784. I visited this island in the 1960s, a visit which was not without incident. The launch of the Royal Sierra Leone Navy, which escorted us to the island, ran out of fuel. We were rescued by another launch which towed us back to Freetown, but our trials were not over. As we came to the pier, a naval rating flung a tow role landward. Unfortunately, he had forgotten to fasten the tow rope to the launch so that it looped into the water. It then had to be retrieved

before we could be moored safely.

*Citizens of the World* provides a discussion of the activities of four individuals: Augustus Boyd, Alexander Grant, Richard Oswald — the best known of the four — and John Sargent II, and their nineteen associates, whose role David Hancock, in this revision of his thesis, attempts to define. He shows how their business was far ranging, extending from Mexico to Calcutta and from Nova Scotia to the Falkland Islands. These operations made them, using the phrase which Hancock employs as his title, "citizens of the world." These men — for there were no women amongst them — largely from Scotland, were neither wellborn nor Londoners by birth. They were drawn, as Professor Hancock shows, from middling provincial Protestant families — Anglican, Presbyterian, and Huguenot — who came to London in middle life. As they were able to move from the periphery to the center of London business, this evidence casts doubt on Hancock's suggestion that London business was markedly hostile to foreigners and strangers. Despite the fact that they were not wealthy, from City families, nor apprenticed, they were able to make their way and establish themselves as London merchants. Professor Hancock goes on to assess the nature of their counting houses, the character of their trading activities, particularly the slave trade, and their role as government contractors before the Seven Years' War, the latter being more profitable than the slave trade.

Thus Professor Hancock discusses a range of issues, some of which — like their reasons for decision making — merit full consideration. He expands his treatment, however, by including wider aspects. He explains, for example, how they came to expand their ownership of land both in Britain and the colonies, detailing the kinds of properties they acquired and built. Usefully, too, Professor Hancock discusses the art collections built up by the associates and lists in detail those of three of them.

Although this book is well produced and illustrated, there is no bibliography. There is, however, copious information about the relevant literature in the numerous footnotes. There is also, among the seven appendices, a discussion of the sources used in compiling the shipping database used in the analysis and a concise list of unpublished sources to be found in public and private archives around the world, and particularly in Europe and the USA — although it is somewhat of a shock that a book published in Cambridge, England, locates the British Public Record Office at Kew Gardens rather than at Kew, where it is usually to be found. This apart, *Citizens of the World* is a distinguished achievement to join other accounts of British mercantile activities in the middle of the eighteenth century.

WALTER MINCHINTON

Exeter, England

*The editors note with deep regret that Mr. Minchinton, a distinguished maritime scholar, died suddenly in August 1996.*

ROBERT L. HERBERT, *Monet on the Normandy Coast: Tourism and Painting, 1867–1886* (New Haven, CT: Yale University Press, 1994). xvii + 149 pages, color illustrations. ISBN 0-300-05973-6. $45.00.

Etretat on the Normandy coast offers no ship a secure refuge. In the nineteenth century, its fishermen drew their boats onto the beach, their wives walking around and around the crude capstans dug into the sand. In 1868, when Monet painted his *Stormy Sea at Etretat*, the village and its cliffs had already become a small tourist resort. A casual visitor to the Musée d'Orsay in Paris can easily miss the deeper meanings of the painting. As Herbert so precisely explains, the surf and immense cliffs certainly demonstrate awesome danger, but the ship closing the shore has no hope of anchorage at Etretat. Far more importantly, two groups of figures look seaward, a pair of local fishermen and, next to them, a group of men and women differently dressed, distinctly tourists on vacation. The painting is not merely a brilliantly executed massing of color, but something more, a penetrating statement about different uses and views of the same coastal location, the same struggling ship, the same storm.

Robert L. Herbert writes so acutely, not only

from long experience as a historian of art, but because he has scrutinized the coastal sites in which Monet worked. His book provides the point Francis Parkman made in 1884 in *Montcalm and Wolfe*: "In short, the subject has been studied as much from life and in the open air as at the library table." Herbert not only examines the contemporary landscapes of Etretat and other now resort towns, but the older landscapes contemporaneous with the paintings Monet made in the two decades after 1867. Monet carefully omitted the hotels, pavilions, and other vacation oriented structures tourists appreciated. Instead, he created his now famous paintings of natural scenery, especially surf-washed cliffs, fishermen's cottages, and drawn-up fishing boats. As Herbert so painstakingly and gracefully explains, Monet created paintings intended to sell to Normandy coast vacationers who wanted in their homes some year-round evidence of what attracted them every year for a month or so of summer. The artist identified a market and produced a great many paintings intended to relieve his shaky financial circumstances. Nowadays, his seacoast paintings are appreciated essentially for their spectacular vision, but Herbert makes clear they have a sophisticated cultural context, too.

Monet worked hard to eliminate all signs of labor, and especially to depict women vacationers not only at leisure, but free from any women who might be working — say, the fishermen's wives walking the capstans. For Monet, Herbert argues, "art was dedicated to a realm of work-free nature, and the representation of labor was incompatible with his conception of a 'motif' or a 'grand view'" (page 104). Everywhere in his Normandy paintings are coastal details that are "picturesque" but devoid of workers. The *caloges*, the half-derelict, long-out-of-the-water fishing boats covered with board or thatched roofs and used as storage sheds, for example, were a distinctive feature of the Etretat beach and figure everywhere in his paintings, but like the active boats temporarily pulled out on the sand, they usually stand bereft of fishermen. Monet's Impressionist style eschews the details that lead the viewer into any sense of "social immediacy." Instead, the viewer of the paintings sees the roofed hulks as symbols of old age, and the sea as a generalized natural force "thwarting human aspirations" (page 106). As Herbert demonstrates by reproducing them, postcard views offered clear evidence of social immediacies, like women turning capstans. Monet aimed at something different, the creation of art that documented what vacationing French families wanted to see at the seashore, broad natural vistas free of social immediacy and always in a context of leisure.

*Monet on the Normandy Coast* points any reader into musing about any seacoast painting by any artist anywhere, particular those by American artists such as Homer and Burpee. It reminds all scholars that the seacoast rewards firsthand exploration, that it must be visited and revisited at all seasons and in all weather, not pondered only at library tables. And it makes clear how much Monet painted in a great movement that made nature and fishing villages into what its author calls "vacationland."

JOHN R. STILGOE

Harvard University

Cambridge, Massachusetts

JAMES PRITCHARD, *Anatomy of a Naval Disaster: The 1746 French Naval Expedition to North America* (Montreal, Kingston, London, and Buffalo: McGill-Queen's University Press, 1995). xxvi + 322 pages, illustrations, bibliography, index. ISBN 0-7735-1325-6. $39.95.

How unusual it is to encounter a genuinely original piece of research such as this, written by a historian as dedicated, meticulous, and objective as Professor James Pritchard of Queen's University, Canada. Few historians are willing to tackle a topic on which no previous book has been written, particularly so unglamourous-seeming a topic as a military campaign without any battles. Pritchard has done so and presented

us with a fascinating and provocative book which illuminates eighteenth century naval history as few other recent works.

On three occasions in the eighteenth century, France sent several thousand troops to North America. The latter two are well known, the 1780 Rochambeau expedition which safely reached Newport and the 1755 troop reinforcements which reached Quebec and Louisbourg, minus two ships-of-the-line seized by Admiral Boscawen (thereby starting a war). In 1746, France dispatched 3,500 troops aboard ten ships-of-the-line and a number of transports; counting supply ships and merchantmen, some hundred ships (and 7,000 sailors) were involved. These were sent not to a friendly port but to the largely uninhabited and uncharted southern coast of Nova Scotia. The soldiers were to be landed in preparation for an attack on Louisbourg (captured by New Englanders the previous year) or on Annapolis Royal, capital of Nova Scotia. After a lengthy voyage, most of the ships arrived safely, but with many sick aboard. Attempts to halt the epidemic by putting the ill on shore failed, and after a month, the French departed with their mission unaccomplished. By the time the ships reached France, many, if not most, of the sailors and soldiers had died of scurvy, typhus, or typhoid fever.

Pritchard's announced purpose in recounting this tragic story is twofold: first, to present a narrative history of this hitherto poorly understood disaster, and second, to use the expedition as a case study of the nature and limits of eighteenth century naval power. On both counts, he is very successful. The campaign itself must have been a daunting historical challenge, as many of the documents are missing (he believes they were probably destroyed in an attempt to obliterate any record of the fiasco). By exhaustive research, he has recreated the story as well as it can probably be done, although some mysteries still remain, such as the total number of fatalities. I was particularly impressed by his mastery of the medical issues involved, not only in the diseases which ravaged the expedition, but also in the mysterious death and in the apparent attempted suicide of the fleet's first two commanding officers. He has also done an excellent job in presenting the political and diplomatic background to the expedition and has traced some of its consequences, including the founding of Halifax near where the expedition made its brief landing.

No one could be better qualified to discuss the broader implications of the subject. Pritchard is the author of an excellent survey of the mid-eighteenth century French Navy, *Louis XV's Navy 1748–1762: A Study of Organization and Administration* (Kingston & Montreal: McGill-Queen's University Press, 1987). He provides a well argued critique of French Naval Minister Maurepas and of the French inability to master the organizational and logistical difficulties in mounting so large a combined naval and military operation. I wonder, however, if a more comparative approach might not have mitigated some of his criticisms. The British record of combined operations during the war of 1739– 1748 was, except for the capture of Louisbourg, one of almost unrelieved failure. (See Sir Herbert Richmond's sweeping three-volume history, *The Navy in the War of 1739–48*, published by Cambridge University Press in 1920). British naval leadership, particularly during the first half of the war, was not much better than the French. Both navies seem to have profited from their mistakes; witness, for example, the brilliant French capture of Minorca in 1756. In 1757, however, the French did suffer another terrible epidemic aboard a fleet sent to Canada. One would like to know more about the differences and similarities of navies in the 1740s.

A more serious criticism can be made about the publisher. Although the book is reasonably priced, handsomely illustrated, and provided with six maps, it inflicts on the reader the most annoying system of annotation I have ever encountered. Not only are the notes at the end of the book, they use short titles so that for a complete citation, the reader must also turn to the bibliography. Furthermore, a number of notes at the end of the second chapter are out of sequence by one number.

Apart from these annoyances, I highly recommend this work. Those who think naval history consists only of battles should look elsewhere, but for those interested in war and life at

sea, Pritchard has found a fascinating story, researched it magnificently, and told it well.

JONATHAN R. DULL

Senior Associate Editor,
*The Papers of Benjamin Franklin*

JOHN DUNMORE, TRANSLATOR, ED., *The Journal of Jean-François de Galaup de la Pérouse, 1785–1788* (London: The Hakluyt Society, 1994). 2 volumes. ccxl + 613 pages, introduction, appendices, illustrations, maps, bibliography, index. Cloth. ISBN 0-90-180-387. £35.00.

There are various ways to achieve fame as an explorer. The preferred method is to make a great journey of discovery and return to tell everyone about it. A second — and less popular — method is to die in the attempt. During the eighteenth century, several European countries sent expeditions to the Pacific Ocean to report on the lands and peoples that were to be found in this former Spanish Lake, and all the expedition leaders became more or less famous by one route or another. One of the most famous explorers of the period did both. James Cook captured the popular imagination with his first two voyages, then met his death on Hawaii during the third voyage, so that his great work of exploration was not complete. The French government saw this tragedy as an opportunity for France to finish what the English had started.

Plans were formulated during the early 1780s for an expedition to the Pacific led by a forty-year-old naval officer named Jean François de Galaup, the first and last of his family to be known by the newly-minted patronymic La Pérouse. The small expedition — two ships and 225 men — left France on the first of August 1785. Touching briefly at Madeira, Tenerife, and Santa Catarina, Brazil, the ships reached Cape Horn in January 1787. After so many months at sea, La Pérouse kept his ships in the harbor at Concepción, Chile, during parts of February and March 1787. The sojourn was brief at Easter Island, where the natives shamelessly stole "everything they could carry away" (pages 68–69). These people stood in his mind in stark contrast with the people of Maui, whose level of civilization seemed to La Pérouse "very advanced in certain respects" (pages 84–85).

From the idyllic island in the middle of the Pacific, the French commander turned his attention to the coast of Alaska, where some weeks were spent charting bays and islands on that fog-bound coast. Then he proceeded south, finally arriving at Monterey, California, in September 1786. Ten days at that presidio and mission provided material for one of the more valuable and original portions of his report, and an outsider's view of the California mission system. While lauding the dedication of the missionaries and their love for the people, the near agnostic La Pérouse found the mission system anachronistic and the colonial government woefully ignorant of the new wisdom of the Enlightenment. In fact, his brief study is one of the main sources of outside information on the California missions. "Much of what we know about the Indian population comes from the writings of La Pérouse," notes Professor Dunmore, "and probably much more was lost in the shipwreck."

This is the great fascination of the French expedition. After stopping at Manila and Macao, La Pérouse sailed on to Formosa and Kamchatka, charting unmapped coastlines of China, Japan, and Korea. Sailing south once more, the expedition made a special search for the mythical islands of Rica de Oro and Rica de Plata, showing conclusively that they did not exist and removing their names from the maps forever. From this point, the French ships proceeded to Samoa and Tonga, then rested at Botany Bay during the early weeks of 1788. At every stopping place where there was the possibility of secure communication with Europe, La Pérouse sent letters and journals to the officials back home. Thus, much of the information gathered in the course of his voyage was saved and later published, but a far greater amount, all the plant and animal specimens, the scientific studies, and the anthropological notes were lost when the ships disappeared in the midsummer of 1788. From later expeditions sent in search of survivors, it was learned that the vessels were wrecked at Vanikoro in the Solomon Islands,

where many of the sailors fell victim to native raiding parties. Some survivors were able to fashion a makeshift boat, although Professor Dunmore thinks it unlikely that any managed to sail away. There is a story of white men in a small boat who landed at Ponape in the Carolines about this time, but they were all killed by the natives.

The journals sent home from various ports of call were edited by Louis-Marie-Antoine Milet-Mureau and published in 1797 with an edition of four volumes, plus an atlas. The first English edition appeared in 1799, with almost simultaneous Danish, German, Russian, and Swedish versions. Since that time, numerous other editions have appeared in French and other languages, along with an equally impressive list of publications about the search for survivors — or, indeed, any definite information about the ultimate fate of the men and the ships. Despite all this interest, no new publication was made from the original journals because they could not be found in the French archives until 1978, when they were located in the Archives Nationales by graduate student Catherine Graziello. The elusive papers had been bound with other materials and cataloged simply as "Documents Scientifiques." Mlle Graziello (now Hustache) published her findings in a 1984 book on the origins and preparations of the voyage.

Professor Dunmore published his first study of La Pérouse in 1965 as part of a two-volume work on *French Explorers in the Pacific* (Oxford: Clarendon Press, 1965–1969). This was followed in 1985 by his full biography in English, *Pacific Explorer: The Life of Jean François de La Pérouse* (Palmerston North, New Zealand: Dunmore Press, 1985). This latter volume was the outgrowth of an annotated and illustrated edition of the La Pérouse journal, published with Maurice de Brossard in 1985 as part of the observance of the bicentennial anniversary of the expedition. One purpose of this edition was to eliminate the editorial changes made by Milet-Mureau. As it turned out, these changes were neither important nor extensive. A reference to the Spanish commandant at Monterey, for example, said: "His house was ours and we could make use of all his subordinates" [Charles N. Rudkin, editor and translator, *The First French Expedition to California: La Pérouse in 1786*, Early California Travel Series, vol. 46 (Los Angeles: Glen Dawson, 1959), 61]. The change from the original seems minor to me, though soldiers might have a somewhat different view of the matter. Dunmore translates the original wording this way: "His house was our home, his soldiers were at our orders and we could use any of his horses" (I:177).

In addition to his very readable translation of the original journal, Professor Dunmore has also provided an extensive scholarly introduction, a full list of members of the expedition, more than a hundred pages of La Pérouse and some other correspondence, a select bibliography, and a detailed index. There are some two dozen reproductions of charts and views, none of which are very clear. However, four excellent outline maps in Volume Two enable the reader to follow the movements of the expedition without difficulty.

HARRY KELSEY

Huntington Library
San Marino, California

DANA A. STORY, *The Shipbuilders of Essex: A Chronicle of Yankee Endeavor* (Gloucester, MA: Ten Pound Island Book Company, 1995). xii + 369 pages, maps, photographs, appendices, index. Hardcover. ISBN 0-938459-09-0. $39.95.

Prepare yourself for total immersion in the life of a shipbuilding community. Those who have been exposed to any of the five or six books written earlier by Dana Story will know what to expect: authoritative description of the wooden shipbuilding process, revealing personal knowledge of people, vessels, and events — often presented in the form of delightful anecdotes — and a warm understanding of life in a small shipbuilding town. This volume contains the best elements local history has to offer.

Dana Story presents in this book a solid frame on which to hang the planks of anecdotal, pictorial, and historical information he has been shaping for years. This is the whole history of

shipbuilding in Essex, Massachusetts, from 1634 to 1949, thoroughly documenting the community's major contributions to the construction of New England's fishing fleets, as well as the other types of vessels built. In six chronological chapters, Story takes the reader across a 315-year span, chronicling the growth of the shipbuilding industry, the products of the individual builders, the development of the relationship between Essex and Gloucester (where so many of the vessels were home-ported), and the changes in vessel design. Story stops the detailed account at 1949, with the launching of the 43' schooner yacht *Eugenia J.* by Jonathan Story, which he calls the end of Essex shipbuilding (some boatbuilding continues).

Story himself is a former Essex shipbuilder, and is the son of the most prolific Essex shipbuilder ever. No one but he, or someone like him, could have untangled the knot of twenty-seven Burnhams and twenty-one Storys who each operated a shipyard in Essex, along with five Choates, five Jameses, and dozens of others. The reader feels in good hands with Story giving the guided tour. Whether he is interpreting nineteenth century construction documents or explaining that keels were assembled upside down in Essex, his personal experience and local knowledge shows. Time and again, the reader benefits from conversations Story had decades ago with shipwrights whose experience extended back to the nineteenth century.

Of great significance are descriptions of the importance of the loftsman in the design process and the disgust of the naval architects, in particular Thomas F. McManus, at having their work altered and reused without credit or payment. The schooner *Florence E.* was an amalgam of three sets of molds.

The pitfalls of history written by an insider seem to have been avoided. Story does not assume that his personal experience was universal, and admits when he is unable to explain a particular issue. Although his father, Arthur D. Story, is heavily emphasized, it cannot be denied that he was a very important builder. Story does admit that the James yard vessels had a better degree of finish than A. D. Story's. His own shipbuilding contribution is glossed over and described as being outside the mainstream of Essex shipbuilding tradition — unacceptable bias would be hard to prove.

The book does suffer from a lack of editorial input. There are many typographical errors, and Story's comments are inserted into quotes with parentheses rather than brackets, leading to some confusion. The lengthy, informative picture captions are often unnecessarily repetitive of information that is given in the text. The index is skimpy. Some outside reviewer might have caught the unintentional gaffes, such as the statement that the divisor in the tonnage formula was originally 100 and later 95, rather than the other way around. Also, it was not the difference between gross and net tonnage that represented the cargo space but the net tonnage itself. A few other minor details: the 1823 *Spy* was not the first three-masted schooner, *Kearsarge* was built in the Portsmouth (Kittery) Navy Yard, not the Charlestown Navy Yard, the Essex-built *John R. Manta* and *Viola* did not represent the end of American whaling and the last American-built whaler, although they were the end of the sailing whaling tradition of this country.

These are but quibbles though — any book of this scope will have these kinds of loose ends. Essex richly deserved to have a history of its shipbuilding history written, and a better person to do the job cannot be imagined. Future historians are left with areas that could be added to or fleshed out, but little that could be substantially improved upon.

NATHAN R. LIPFERT

Maine Maritime Museum
Bath, Maine

SHELDON S. COHEN, *Yankee Sailors in British Gaols: Prisoners of War at Forton and Mill, 1773–1783* (Newark: University of Delaware Press, 1995). 278 pages, illustrations, bibliography, index. ISBN 0-87413-564. $45.00.

Sheldon S. Cohen has provided us with a well researched chronicle of the experience of approximately 3,000 American sailors held in Mill and Forton Prisons during the War for

Independence. His book is the place to look for physical descriptions of the prisons, discussion of prison administration, efforts to aid the prisoners both in England and elsewhere, and a general outline of their hardships, escapes, desertions, and trauma. If the book is workmanlike, it has weakness in interpretation. Cohen minimizes the importance of previous studies and thereby misses the opportunity to explicitly build upon the insights of others. Instead, he falls back on old-fashioned consensus celebrationist history, emphasizing what he sees as expressions of American uniqueness and commitment to revolutionary ideas of the imprisoned tars.

Anyone familiar with the literature of the American Revolution will know that sailor prisoners of war became the focal point of several pathbreaking articles published by Jesse Lemisch in the 1960s. While lacking the almost day-by-day coverage provided by Cohen, the research of the articles concerning the sailors — including the use of British archival material — was almost identical to Cohen's. Likewise, much of the diplomatic information discussed by Cohen appeared in an article by Catherine Prelinger. Given the prominence of this work, it is hard to understand how Cohen could say that these prisoners have been "little-remembered" (page 8).

Cohen's interpretive relationship with the earlier work by Lemisch is interesting. He does not build upon or extend Lemisch's concern with a separate sailor mentality. Instead, Cohen implicitly relies upon Lemisch, but applies his own mainstream consensus history of sailors as patriots. He argues that somehow colonial Americans were imbued with certain values, such as notions of republican self-government expressed in *ad hoc* organizations within the prison. Lemisch argued that these organizations represented a nascent democratic urge among common seamen. Cohen believes prisoners expressed "native traits of resourcefulness, obstinacy, and courage" through their self-organization (page 113). This is one of the few places Cohen relies on secondary sources. The reason is that the primary material is not clear on the extent of prisoner organization; the evidence is scanty, occasionally suggestive, but never clear-cut.

Cohen also believes that typically American characteristics such as "Yankee resourcefulness" and a devotion to the cause of American independence can be seen in the many escapes from prison — but were the sailors escaping in the name of liberty? Cohen thinks so. What he fails to see is that many escapees sought a different type of liberty. They escaped to gain a brief moment of wine, women, and song. The admiralty records — and even some of the first person accounts — make it clear that quite a number of sailors prearranged an escape and a spree with the intention of being recaptured. The £5 reward would pay for this "liberty" (Lemisch at least acknowledged that this practice existed). Cohen, mired in his desire to find patriots, only comments that some prisoners were misled by officials who claimed to be helping them. When Cohen mentions the incredible case of Thomas Kinsey, who escaped at least fifteen times, he sees him as an example of Yankee patriotic determination. How could anyone who managed to elude guards *fifteen times* be so unlucky or so inept as to be recaptured again and again? In all likelihood, Kinsey had honed his working of the reward system to an art. On at least one occasion, British officials balked at paying his captors because they suspected collusion.

Twenty-five years ago, Jesse Lemisch opened up new vistas of scholarship, that it is important to examine the world of the "inarticulate" — men like William Widger held in Old Mill Prison. We need not know to just tell the story of Cohen's "unsung" patriotic heroes, but to go beyond Lemisch and understand more fully the variety and contours of the mentality of Jack Tar.

PAUL A. GILJE

University of Oklahoma
Norman, Oklahoma

HAROLD D. LANGLEY, *A History of Medicine in the Early U.S. Navy* (Baltimore: Johns Hopkins University Press, 1995). 360 pages, 36 illustrations, 43 pages of endnotes, bibliography, index. ISBN 0-8018-4876. $49.95.

One void in the ever-expanding historiography of the American sailing navy is the health, diet, and medical treatment of the people aboard the early ships. Rates of mortality and morbidity of the officers and crews and the related issues of who cared for the sick and wounded, what the state of medicine was in recognizing and treating disease and traumatic injuries, and a comparison of those treatments to methods now known to medicine would provide a new gloss to the history of the early Navy. For instance, the 18-gun *Warren* returned to Boston in September 1880 from Havana after a yearlong cruise with thirty-nine dead from yellow fever and more than sixty others having been sick. Yet, the frigate *Boston*, which returned that July from Haitian waters after a yearlong cruise, had only one dead, and that one, according to the *Federal Gazette & Baltimore Daily Advertiser*, "was by his own folly." Educated speculation as to why some ships were healthy and others a nightmare of disease would be a real gain to historians.

Unfortunately, despite its title, *A History of Medicine in the Early U.S. Navy* does not center on medicine. Rather, it addresses the rise of the medical corps as a profession, with the concomitant problems of recruitment, duties, and pay of doctors, and the funding and creation of hospitals, which is a marginal theme. Historiographically, Langley's book is a lengthy appendix to Christopher McKee's *A Gentlemanly and Honorable Profession* (Annapolis: Naval Institute Press, 1995) for the Navy's medical officers.

Langley's work covers the years from the formation of the Federal Navy in the 1790s through the creation of the Bureau of Medicine and Surgery in 1842. Langley's research is vast and his understanding of both the Navy and the Navy's medical arm is deep, and he has saved the stories of seemingly every doctor's travails within the administrative strictures of the Navy, along with some interesting details as to who these men were, how they entered into and served in the Navy ashore and afloat, and what their contributions to medicine were. The organization is problematic, not beginning with foreign naval antecedents or even with the contemporary civilian medical profession. Langley's work does not even touch on shipboard health until page 60.

Moreover, *A History of Medicine in the U.S. Navy* lacks focus. For instance, Langley lists without analysis individual shipboard cases found to be of interest to given naval surgeons, although they are not necessarily of importance to the book's theme nor to the reader. He relates innumerable instances of how individual surgeons purged or bled any number of sick for any number of diseases, as if the purging and lancing actually helped. Indeed, if the audience for this book is lay, and for those interested primarily in the Navy, Langley should have provided a glossary of medical terms and diseases, with the disease name.

FREDERICK LEINER

Baltimore, Maryland

ROBERT J. SCHNELLER, JR., *A Quest for Glory: A Biography of Rear Admiral John A. Dahlgren* (Annapolis: Naval Institute Press, 1995). 372 pages, notes, bibliography, index. ISBN 1-55750-762-7. $37.95.

Born in 1809, John A. Dahlgren entered the US Navy in 1842 as a midshipman. Five years later, he was assigned to the Washington Navy Yard, where he discovered his true calling in ordnance work. Ultimately, Dahlgren came to direct the US Navy's ordnance department. He is chiefly known as the designer of a family of highly successful naval guns, from boat howitzers to twenty-inchers. His heavy guns, instantly recognizable by their "soda bottle" shape, were renowned during the Civil War for their reliability, and Dahlgren well deserves his title of "Father of US Navy ordnance."

As Robert Schneller, a historian with the Naval Historical Center, makes quite clear, the proud and irascible Dahlgren was also consumed by a quest for glory. He parlayed a close friendship with President Lincoln (which brought him promotion to rear admiral) into command of the

South Atlantic Blockading Squadron in June 1863. Under him, the squadron successfully blockaded the coast and defended the Union base at Port Royal; it also participated effectively in operations with the Army, but it was unable to capture Charleston. Dahlgren had counted on a glorious naval victory there to secure him lasting fame as a commander at sea. Instead, the cradle of the Confederacy fell to the Union Army. After commanding the South Pacific Squadron, Dahlgren returned to Washington in 1868 as chief of the Bureau of Ordnance. He died in 1870.

Certainly, this is the first satisfactory biography of Dahlgren. Before this book, there was only C. Stewart Peterson's cursory study, *Admiral John A. Dahlgren, Father of U.S. Naval Ordnance* (1945) and Madeleine V. Dahlgren's paean to her husband, *Memoir of Admiral John A. Dahlgren, Rear Admiral United States Navy* (1882).

Schneller has made excellent use of primary materials, especially the Dahlgren family papers, in a number of repositories, and he is quite familiar with the secondary literature. The text is also well written, but his focus is on Dahlgren the man and his relationship with others. While there is much here on how he got his guns approved and his struggles with founders, there is little on the characteristics of the guns themselves or assessments of them in service. There is only scant mention of his boat howitzer, recognized for a generation as the finest boat guns in the world. Nor is there any real discussion of the heavier guns apart from their development. Schneller only mentions the thirteen-inch and twenty-inch guns in passing, and he does not discuss variants in types of shot and shell guns. There is also little on Dahlgren's rifled guns — his one great failure. Much to his chagrin, they were withdrawn from service during the War.

On occasion, Schneller omits key points. For example, he makes much of the 1844 "Peacemaker" explosion aboard the *Princeton*, which he calls "a disaster unparalleled in the history of American naval ordnance" (page 69), but he fails to mention one of its chief consequences — a reduction in powder charges, revised upwards only after the *Monitor–Virginia* battle. John Ericsson, for one, believed that had that restriction not been in place, the *Monitor* would have defeated her Confederate opponent.

Schneller certainly places Dahlgren in the pantheon of US Navy heroes. Others have denigrated Dahlgren's command of the South Atlantic Blockading Squadron, but Schneller believes that despite story relationships with others — especially Union General Quincy A. Gillmore — and his being blinded by his obsession of trying to take Charleston, Dahlgren "had much to be proud of" (page 310).

The notes are well organized and refreshingly complete, as is the bibliography, although the inclusion of a book on the World War II battleship *Yamato* seems a bit of a stretch. Shortcomings aside, this is an important biography of a key figure in the nineteenth century US Navy. Those interested in this period will want a copy of it in their libraries.

SPENCER C. TUCKER
Texas Christian University
Fort Worth, Texas

CHESTER G. HEARN, *The Capture of New Orleans, 1862* (Baton Rouge: Louisiana State University Press, 1995). 292 pages, illustrations, maps, appendix, bibliography, index. $26.95.

Naval historian Chester G. Hearn details in this book how in April 1862, the South lost the lower Mississippi River and with it the region's greatest port city. News of the loss of New Orleans shocked Confederate President Jefferson Davis and Secretary of the Navy Stephen R. Mallory. They believed any Federal assault on the Crescent City would come from upriver rather than below, where seventy miles downstream, the southern approach was guarded by Forts Jackson and St. Philip. The two forts, one on each bank, were strengthened by water batteries and a strong barrier across the river. Davis was confident that high seas Union warships would be unable to maneuver in the river past the first, but here the attack actually came that decided the fate of New Orleans.

Flag Officer David G. Farragut, a Virginian

in command of the Union fleet that passed the forts, was just the right man for the task. The choice of commander for the expedition made a difference, and Hearn credits Union Secretary of the Navy Gideon Welles not only for selecting Farragut, but then mobilizing all resources necessary to bring success to the mission. The Confederate command, on the other hand, was in great disarray. Authorities in Richmond failed to understand the importance of naval power, and even when Farragut's expedition became a clear threat to New Orleans, they did little to coordinate the command system in the city. In addition, Confederate troops mustered into service in the area were repeatedly ordered to duty elsewhere.

Hearn is highly critical of Mallory's attempt to construct two ironclads on the riverbank above New Orleans. The vessels were to be the *Louisiana* and *Mississippi*. They were contracted separately, and neither builder had any experience in ironclad construction. Of special interest were Nelson Tift and his brother Asa, who began the *Mississippi* from a small model Nelson had made on his plantation. The Tifts, although originally from Connecticut, were loyal southerners and friends of Mallory (Nelson was the founder of Albany, Georgia, where he operated a significant naval supply center, including meat packing, during the War. The Tifts believed that with few trained naval architects and shipbuilders available, the Southern Navy must be built by ordinary carpenters. The contractors of the two ironclads scoured the countryside for scarce workmen, iron, lumber, and propulsion machinery. As Farragut approached, the *Louisiana*, with no motive power, was rushed into the river as a floating battery while the even less completed *Mississippi* was destroyed without taking any part in the action. Hearn notes correctly that neither ironclad made any difference in the battle. He also condemns the attempt to build them, especially both at the same time, writing that the labor and equipment should have gone toward strengthening existing wooden Confederate gunboats in the area. Yet, only ironclads could have repulsed Farragut. An improved Confederate Mississippi River mosquito fleet would have been no match for the large Federal warships, as was amply demonstrated earlier at the battle of Port Royal.

In an epilogue, Hearn begins with a promising analysis of what the loss of New Orleans meant to the Southern war effort, but, unfortunately, the theme is not sustained. The fall of the city has been the focal point of discussion known as the "western theater school of thought." According to this interpretation, had the South developed a navy sufficiently strong enough to repulse Farragut, the long chain of events that led to the defeat of Confederate armies could have been prevented. It would have been interesting to read of Hearn's thoughts on this presumed domino effect, which has been ably set forth by Charles Dufour in *The Night the War Was Lost* (1960).

In this book, Hearn's strengths are detail and personal relationships. The work is well documented. Hearn makes a significant contribution to the naval history of the Civil War, and in the process adds weight to the proposition that the South's greatest mistake was neglect of its Navy.

ROYCE SHINGLETON

Darton College

Albany, Georgia

KEITH YATES, *Graf Spee's Raiders: Challenge to the Royal Navy, 1914–1915* (Annapolis: Naval Institute Press, 1995). xvii + 336 pages, 25 illustrations, bibliography, index. ISBN 1-55750-977-8. $32.95.

Professor Yates' book recounts the operations of the German Pacific Squadron in 1914 from the beginning of the war until the destruction of the last of Admiral von Spee's ships, the *Königsburg* in 1916. He modestly claims that his book is intended for the lay reader, not for the professional historian, and he has eschewed the use of archival material or footnotes. However, he has produced more than simply a rattling good yarn. This book is a serious study of the successes and limitations of cruiser warfare in the opening months of World War I.

At the beginning of the war, the function of Spee's squadron was to disrupt Britain's overseas trade and thereby force the Royal Navy to

dissipate its strength by compelling it to detach ships from the North Sea to hunt him down. His main problem was that he lacked a secure base for his cruisers in either the Atlantic or the North Sea and, following the fall of Tsingtao, in the Pacific as well. It is therefore not surprising that much of the story Yates has to tell is concerned with the constant preoccupation of all of von Spee's captains, how they could secure for themselves an adequate supply of coal. The German Admiralty had taken the precaution of organizing a small number of German colliers to assist them, but they quickly fell prey to Allied cruisers; thenceforth, von Spee's captains had to rely on capturing Allied colliers. This hand-to-mouth existence meant that in the long run, they had little hope of survival — a fact which the *Admiralstab* in Berlin and the captains and crews at sea fully recognized. By contrast, the Royal Navy had bases across the globe and ample supplies of coal. What it lacked, until Churchill and Fisher took the decisions after the battle of Coronel to detach two battle cruisers from the Grand Fleet, was adequate numbers of fast and heavily armed modern cruisers to find and destroy von Spee's main squadron, a task they accomplished in December 1914 at the Battle of the Falkland Islands.

Much of this is a familiar story, but it is worth dwelling on the methods which the German cruiser captains employed when they went about their task, for they were distinguished by a punctilious adherence to the spirit and letter of international law. The most successful of the commerce raiders, the *Emden,* always took great care to operate according to the rules of cruiser warfare, taking off the crews of its victims before sinking them. Indeed, the only fatality that the *Emden* inflicted on the passengers and crews of the merchant ships it encountered was a single racehorse, which was shot by one of the ship's officers in preference to allowing it to drown. The contrast with the methods employed by the German U-boat fleet in 1917–1918 could hardly have been more striking.

Despite their gallantry, von Spee's ships failed to achieve their main purpose. At the end of the campaign, the Germans had lost eight cruisers and 2,400 highly trained sailors. The British had lost six warships and a quarter of a million tons of merchant shipping, losses which it could easily sustain, and the temporary detachment of two battle cruisers from the Grand Fleet had only a brief impact on the naval balance of power in the North Sea. The Germans also disrupted the sailing of a large troop convoy from Australia to Egypt, but to little practical purpose. The ANZAC Corps still survived in good time for Gallipoli. Yates suggests that von Spee could have done far more harm to British naval supremacy if he had adopted different tactics. If, rather than detaching only two of his light cruisers to operate independently, he had detached all of them and merely kept his heavy cruisers, the *Gneisenau* and *Scharnhorst*, together, the damage done to British trade might have been considerably greater and the Royal Navy might have been compelled to detach a correspondingly larger number of vessels from the North Sea. As it was, von Spee was, in Churchill's apt phrase, "a cut flower in a vase. Fair to see yet bound to die" (page 220).

DAVID FRENCH
University College
London

MALCOLM R. MURFETT, ED., *The First Sea Lords: From Fisher to Mountbatten* (Westport, CN: Praeger, 1995). xiii + 313 pages. ISBN 0-275-94231-7. $59.95.

Naval history has often been excoriated for being parochial and old-fashioned with respect to subject, sources, and analysis. This book, with honorable exceptions, does not dispel any of these criticisms. Conceived as a volume to parallel Robert Love, Jr.'s compilation *The Chiefs of Naval Operations* (Annapolis, 1980), *The First Sea Lords* is an uneven snapshot of the men who held that office in the period from 1904 to 1959.

The overall value of this volume is that it provides a good starting point for further research. Only a few of the First Sea Lords have been the subject of serious study; in fact, a number of them — such as Sir Francis

Bridgeman-Bridgeman and Sir Henry Jackson — lack even an authorized biography. *The First Sea Lords* is also a useful research tool. The select bibliography has a valuable list of the private papers of naval figures that goes well beyond what can be found in the relevant volume of Chris Cook's *Sources in British Political History* (London, 1975–1985). Beyond that, however, this bibliography is disappointing, a result of the methodological shortcomings discussed below.

By far, the best two chapters in the collection are the studies, both by Nicholas Lambert, of two successive First Lords, Sir Arthur Knyvett-Wilson (1910–1911) and Sir Francis Bridgeman-Bridgeman (1911–1912). Lambert utilized a wide variety of primary material previously unused by historians, and shows that naval history did not come to an end with the resignation of Sir John Fisher (1904–1910 and 1914–1915). Indeed, it is a pity that Lambert did not also write the chapter on "Jackie" Fisher, for Barry Gough's disquisition on that Admiral is pedestrian at best.

There are several other chapters that are exempt from my general criticisms of this book. Donald Schurman shows that Jellicoe (1916–1917) should not be judged solely on the basis of Jutland, but on his undoubted contributions with respect to blockade and general British strategy in the war. Murfett, reflecting the work done in his recent detailed monograph — *In Jeopardy: The Royal Navy and British Far Eastern Defence Policy, 1945–1951* (Kuala Lumpur, 1995) — is good on Sir John Cunningham (1946–1948) and his problems. Tom Frame, Eric Grove, and Geoffrey Till provide interesting voyages into the still largely uncharted seas of the Royal Navy after 1950.

It is difficult to be charitable about the remaining chapters. Much of this stems from the research that underpins them. It is inadequate, in a supposedly "analytically based volume" (page ix), for contributions to be based on the private papers of the individual concerned bolstered only by an occasional reference to an Admiralty file. If the reader were to judge the secondary literature by the notes, almost nothing has been written pertinent to the RN except the works of Stephen Roskill and Arthur Marder. This approach is precisely why naval history has been marginalized by mainstream historians. Where are the references to the extensive material found in the files of the Committee of Imperial Defence, Chiefs of Staff, Foreign Office and Treasury, not to mention the Cabinet Office? For example, if this wider research were done, it would be difficult for Eric Grove to write such a fulsome paean to the genius of Admiral Chatfield (1933–1938). Similarly, as the recent work of Orest Babij (in *Diplomacy and Statecraft*) has shown, a closer examination of the evidence largely exonerates Admirals Madden (1927–1930) from the criticism leveled against him by Nicholas Tracy.

In short, if there is any hope for naval history to become anything more than an antiquarian avenue of limited interest, defense policy must be approached in the widest possible sense — that is, the RN must not be dealt with as something separate from the British government. Instead, historians must consider why the RN existed, for what purposes the government intended to use it, and the role that it played in the overall scheme of British external relations. This means that there is a need to examine a much wider range of primary sources than the DM files; indeed, placing a moratorium on the use of them would mark a good start to the revivification of the study of British naval history.

KEITH NEILSON
Royal Military College of Canada

JAMES F. CALVERT, *Silent Running: My Years on a World War II Attack Submarine* (New York: John Wiley & Sons, 1995). xvii + 282 pages, illustrations, maps, index. ISBN 0-471-12778-7. $27.95.

The United States submarine force made a decisive contribution to the Allied victory in the Pacific War from 1941 to August 1945. Operated by less than two percent of the total US Navy personnel, American submariners sank nearly fifty-five percent of all Japanese merchantmen and almost thirty percent of all Japanese warships. However, the cost to the American subma-

rine service was also high. Of the 248 US Navy fleet boats in commission during the war years, forty-one were lost directly due to Japanese action, including passive means such as mines. About 3,500 submariners died out of some 16,000 who actually made war patrols. This casualty rate of nearly twenty-two percent was the highest in any branch of the United States armed forces in WWII. This is the pivotal historical arena in which *Silent Running* is squarely rooted. James F. Calvert, retired US Navy vice admiral, writes his engaging experiences in numerous submarine war patrols against the Japanese from 1943 to the War's end.

No matter how thorough historians have been, such rich memories of a participant are a welcome addition to the literature of the Second World War. The reader gains a much better appreciation of the wartime perils of US Navy sailors in the silent service, from the terror of Japanese depth charges exploding close to Calvert's submerged submarine to the smell of diesel oil and a sense of living conditions in the cramped spaces of the fleet submarines of the era. One appreciates the endurance required of the sailors and their equipment during the long war patrols of the USS *Jack* (*SS-259*), Calvert's submarine of seven patrols until the summer of 1945. The *Jack* ranked ninth in the destruction of Japanese ship tonnage during the War; thus, Calvert's wartime narrative is a rich source for high drama and heroism. The titles of a few chapters — "Patterns of War in the Deep," "At the Gates of Tokyo," and "Fighting Wounded" — suggest the liveliness of the firsthand account.

The shortcomings of this volume are relatively minor. The role of ULTRA secret information, obtained from reading Japanese Navy, Army, and Air cryptologic systems, deserves more explanation than the mere two pages offered by this highly experienced officer. The ability to read Japanese message traffic and quickly put useful information in the hands of submarine skippers on patrol throughout the Pacific was a tremendous advantage to the US Navy's effort to strangle Japan's supply lines and render the Imperial Japanese Navy impotent. Just for the record, the American submarine *Seawolf* was **not** "the only US submarine known to have been killed by friendly forces" (page 240, footnote) during the War. Additionally, the USS *Dorado*(*SS-248*), built in one year and commissioned on 28 August 1948, was lost forty-five days later with all hands — seventy-six sailors — in a tragic accident involving "friendly fire."

In spite of these observations concerning ULTRA and the *Dorado*, these WWII reminiscences are highly recommended reading. As Edward L. Beach, a submarine force wartime contemporary of Admiral Calvert, writes in the foreword, "As Calvert describes his experiences in the *Jack*, it becomes clear to all submariners acquainted with the wartime conditions of service that he must have been virtually one in a million" (page x).

CARL BOYD

Old Dominion University
Norfolk, Virginia

JOHN BUNKER, *Heroes in Dungarees: The Story of the American Merchant Marine in World War II* (US Naval Institute Press, 1995). xiv + 370 pages, photographs, appendices, bibliography, index. ISBN 1-55750-093-2. $32.50.

John Bunker's obvious purpose in writing this book was to publicize the heroic contributions of the civilian seamen and the naval armed guardsmen who made up the crews of the American merchant marine during World War II. Mr. Bunker himself was a merchant seaman during that conflict.

Many of the books which have concentrated on the role and the sacrifices of the merchant marine crews during that war have focused on specific shipping routes where intensified enemy action took place, the North Atlantic and North Russia runs being the more common choices. Bunker, on the other hand, has taken a more broad brush approach by relating selected examples of sinkings which took place worldwide. The chapters are organized in a fashion which covers each area separately.

The book begins with a brief summarization of the composition of the merchant fleet and the structure of the labor force which manned it. The

remainder of the book — well over ninety percent of its text — is devoted to ship losses and survivor experiences. The writing largely takes on a narrative style. Mr. Bunker's postwar careers in public relations for the maritime industry and as a newspaperman are evident in his approach. On the positive side, this has resulted in a very readable text, but on the negative side, his overuse of the heroism slant is a detriment to what might have been a more analytical discussion.

The book's bibliography would indicate that the author's information came largely from published sources and from the files of newspapers and the in-house news sheets of three major maritime unions. His footnotes, though, make reference to a number of personal interviews he had with survivors of sinkings, some of these interviews having taken place during the 1940s and some following the War.

There are an inordinate number of factual mistakes in this book, many of them inexcusable in light of the amount of easily retrievable published and archival material available. Bunker has repeatedly confused the functions of the Maritime Commission with the War Shipping Administration (WSA), examples of this being on pages 192 and 199. He claims that seamen on merchant ships, which remained overseas in excess of the one year contractual obligation inherent to ship articles, had only the choice of signing up for another year or "swimming home" (page 189). This belies the facts. Crews in such circumstances were insistently offered repatriation by the War Shipping Administration. Such errors are the result of simple carelessness which should have been picked up by a diligent editor. Bunker states that the *West Ivis* (built in 1919) was a "Liberty" ship from the World War I emergency shipbuilding program (page 45). In another, following his own careful explanation that some survivors were landed in Spain and repatriated through Gibraltar, Bunker footnotes his sources a conversation with one of those survivors upon the man's "return from Germany" (chapter 14, footnote 11). The record, which I have researched, is clear that none of the survivors of that ship loss, the SS *James Denver*, ever transited through Germany. Bunker also errs from time to time in his ship descriptions by confusing Army transports (USATs) with merchant ships, examples including *Jack*, *Merrimack*, and *Arthur Middleton*, which were all USATs, not merchant ships. Conversely, he has identified the *Dorchester* as an "Army transport" when in reality she was a merchant ship that was WSA-managed and controlled up to the time of her loss. In other instances, the nationality of Panamanian and other foreign flag vessels is not made clear, a situation which at least inadvertently connotes to readers that they flew the American flag — an important point since the theme of this book is supposed to be American flag vessels.

My largest criticism is reserved for the book's footnotes, which are not only sparse, considering the scope of the subject covered, but are often misleading in their content. The most flagrant example is Mr. Bunker's use of the vague cite "Voyage Report, National Archives." In National Archives terminology, this reference has absolutely no meaning, therefore being unretrievable under such a heading. In one footnote, Mr. Bunker gives us a clue as to what he means by stating: "Because the ship had no Armed Guard, there is no voyage report" (Chapter 19, footnote 1). Although there may be some isolated instances where excerpts from an armed guard commander's report may have been included as a WSA record, the armed guard files, together with the armed guard voyage reports, are exclusively Navy records, having been recently transferred to the military records sections of the National Archives. On the other hand, WSA files are all held by the civil branch of the National Archives.

For those with a taste for tales of survival at sea, Mr. Bunker's book is worthwhile reading. *Heroes in Dungarees* does not, however, rate as a book which can be recommended to the serious student of the war at sea.

CHARLES DANA GIBSON

Camden, Maine

EDWARD L. BEACH, *Scapegoats: a Defense of Kimmel and Short at Pearl Harbor* (Annapolis: Naval Institute Press, 1995). 212 pages, index, illustrations. $24.95.

Fascination with the Japanese attack on Pearl Harbor on 7 December 1941 spawned seven official investigations, over two hundred books — including two classics, Gordon Prange's posthumous *At Dawn We Slept* and Martin Melosi's *Shadow of Pearl Harbor* — and thousands of articles, scholarly and otherwise. Reminiscences or technical treatises aside, this inky outpouring neatly divides into two opposing camps. The "conventional interpretation" holds that American relations with Japan deteriorated after July 1941. President Franklin D. Roosevelt's diplomacy was aimed, without provoking, at supporting China and the British Empire and deterring Japanese expansion. During several crises, FDR and his service chiefs, Admiral Harold R. Stark, Chief of Naval Operations, and General George C. Marshall, Army Chief of Staff, provided their overseas commanders with timely intelligence and reasoned, appropriate warnings of likely Japanese moves, but that Admiral Husband Kimmel, Commander in Chief of the Pacific Fleet, and, to a lesser extent, General Walter Short, Commanding General of the Hawaiian Department, failed to heed those alarms and alert their forces which were, as a result, defeated badly when the enemy unexpectedly attacked. This line, accepted by most academic historians, was fully explained by Samuel Eliot Morrison's semi-official *History of U. S. Naval Operations in World War II* and most recently elaborated by Prange.

A contrary school, self-consciously labeling themselves "revisionists," argues instead that Roosevelt's foreign policy provoked the Japanese attack. The President, his advisors, or some nefarious combination learned sometime in advance of the enemy plan — or should have — and wittingly withheld this knowledge from Kimmel and Short. These Washington figures later conspired to deceive various official wartime and postwar inquiries to protect themselves or their erstwhile superiors.

The revisionist line was accepted by few professional historians — the late Charles Beard, the economic determinist, being the most eminent. Professional legend has it that, on his deathbed, Beard regretted not having the time to publish another indictment of "that S. O. B. Roosevelt." With the appearance of the magisterial *At Dawn We Slept*, Pearl Harbor revisionism seemed as discredited as does the "New Left" today, but the best selling *Infamy* revived the debate — although John Toland's work was rightly savaged by professional journals. Interest was also enlivened by Donald Goldstein and Kathleen Dillon, Prange's literary heirs, who mined his papers to produce two additional volumes, the most important being *Pearl Harbor: The Verdict of History*. Seizing the main chance, British TV writer John Costello ghosted *And I was There*, pitched as the memoir of the late Admiral Edwin Layton, Kimmel's intelligence officer. In this curious work, written in both the first and third persons and dealing with events far removed from Layton's purview, Costello defended Kimmel and accused Roosevelt, Marshall, Stark, and especially the prewar director of the Navy's War Plans Division, Admiral Richmond K. Turner, of sundry skullduggeries.

With slight variations, this is essentially the tortured case argued by *Scapegoats*, the latest revisionist entry. A submariner, Hill staffer, and postwar novelist, Beach asserts that "it was because of decisions made in Washington that Kimmel and Short were so drastically ill-supplied with both the information and the tools to do their jobs properly" (page 174). Beach also claims that, among other failings, Stark and Turner erred by not providing the Pacific Fleet with a Purple machine to decipher Japanese diplomatic traffic, although such messages never mentioned military plans and provided only one aspect of the ongoing diplomacy. Beach also charges that the CNO failed to broadcast timely intelligence and alerts as an alternative, and conspired, with General Marshall, perhaps the President, and others, on the eve of 6 December to prevent the Hawaiian commanders from learning what was afoot. Thereafter, these malignants concealed their foul work, a view first advanced in *The Final Secret of Pearl Harbor* by

Admiral Robert "Fuzzy" Theobald. How this was done under the eagle eye of the wartime team headed by Fleet Admiral Ernest J. King and Admiral Charles M. Cooke goes unexplained. Akin to his revisionist predecessors, Beach adduces no unambiguous evidence whatever to support his many hoary accusations, and *Scapegoat*'s wholly unfounded insinuations about Admiral Stark, an extraordinary officer of stainless honor and uncommon achievements, are peculiarly smarmy.

Beach's work suggests two propositions. First, if naval history is somehow important, then it surely should not be written by unschooled amateurs. Second, service in the Navy in no way qualifies one to write serious naval history — as distinct from reminiscence. According to Beach, "the sheer immensity of the material is overwhelming," a confession that his research was ludicrously incomplete. *Scapegoats* contains neither a conventional bibliography nor any footnotes whatsoever. Admitting there were "hundreds of books" on Pearl Harbor, Beach consulted only an eccentric assortment of two dozen books — including *The Haldeman Diaries* of the Nixon White House, five articles, and portions of the 39-volume Congressional *Pearl Harbor Attack Hearings* released in 1946. Sandy Smith's *Index* to these thirty-nine volumes would have been useful, but Beach did not seek out this important guide. Neither did he read Forrest Pogue's definitive *George C. Marshall*, Paolo Coletta's detailed *Patrick Bellinger and U. S. Naval Aviation*, nor B. Mitchell Simpson's well documented *Admiral Harold R. Stark. Scapegoats* might have been informed by some archival research, but for Beach, this too was apparently "overwhelming."

Owing to shabby research, factual errors abound. Central to Beach's argument is the claim that Kimmel "was never allowed to defend himself," although the *Hearings* Beach consulted show that the disgraced admiral testified volubly on several occasions. Nor did Beach grasp the universe inhabited by his actors. For instance, he believes that "most isolationists were Republican Party members, conservative in outlook, viscerally opposed to nearly all aspects of the liberal revolution." As Wayne Cole pointed out in *Roosevelt and the Isolationists*, however, region — rather than party or ideology — defined the isolationists, who were led by many radical-progressives, including George Norris, the LaFollettes, Homer Bone, Burton Wheeler, Hiram Johnson, and Gerald Nye. Explaining why the Pacific Fleet was under strength, Beach maintained that "nearly all we produced went to Europe, specifically to beleaguered England" (page 12). This would have brought a snort from Winston Churchill, inasmuch as Lend Lease claimed less than fifteen percent of the output of American metal-bent military goods in 1941. Indeed, such a small fraction of *Scapegoats* is free of major error of fact or simple reason that the Naval Institute's editors might well be brought to account.

In the ancient Jewish ceremony, the scapegoat was a mute creature, known to be blameless, but punished nonetheless for the sins of others. Kimmel was hardly mute, whipping up his tight coven of supporters for two decades. When one of them stumbled upon evidence — still unpublished — devastating Kimmel's case, the admiral questioned his sanity and urged another henchman to "keep quiet." Kimmel's contemporaries did not hold him blameless, either. *Scapegoats* is the centerpiece of Beach's unsuccessful campaign for the reinstatement of Kimmel's four-star rank. This would, he contends, bring a "restoration of our national honor," but one wonders if Kimmel's posthumous rank really ascends to the level of Bosnia (page 185). Because he did not do his homework, Beach is unaware of a similar effort thirty-five years ago by the President of the Naval Academy Alumni Association which was drowned in a sea of outraged vitriol from Kimmel's fellow graduates. Indeed, Beach's lament that Kimmel "was a pariah" quite accurately describes the treatment he was justly accorded by his peers. Unlike the Biblical scapegoat, Kimmel was hardly blameless, nor was he relieved of his command for the sins of others. His Navy counterparts from San Francisco to Panama to Alaska to Manila had put their local forces on alert before the enemy struck, but Kimmel took no step to make the Pacific Fleet ready. Thousands of American soldiers died as a result. Kimmel was no scape-

goat. He was a scapegrace, a truly reckless, bungling sinner who never repented.

ROBERT W. LOVE, JR.

US Naval Academy
Annapolis, Maryland

GAYLORD T. M. KELSHALL, *The U-Boat War in the Caribbean* (Annapolis: Naval Institute Press, 1994). xviii + 514 pages, illustrations, maps, bibliography, index. ISBN 1-55-750-452-0. $32.95.

Gaylord T. M. Kelshall, a former officer of the Trinidad and Tobago Coast Guard, has written a superb history of the U-boat war in the Caribbean during World War II. The U-boats during the years 1942–1945 sank exactly 400 Allied ships and damaged a further fifty-six vessels in the Caribbean while the Allied forces destroyed seventeen U-boats. German U-boat attacks in the West Indies began in 1942 with operation *Neuland*, when the U-boats appeared to be running wild, sinking mostly unescorted merchant ships, and ended with the cruise of the U-530, which remained for a month off Trinidad in 1944 without attacking or sinking anything.

*The U-Boat War in the Caribbean* shows effectively how the U-boats in 1942, operating against almost nonexistent Allied antisubmarine forces, were able to sink scores of defenseless Allied merchant ships in the West Indies. Beginning with the summer of 1942, the Allies started to defeat the U-boats in the Caribbean with the introduction of convoys supported by the US Navy and the US Army Air Force aircraft. Air power was the key to this defeat of the U-boats in the West Indies. Indeed, convoys in the Caribbean were never as strongly escorted by surface escorts as in the North Atlantic. However, by the middle of 1943, any U-boat which entered the Caribbean found itself being mercilessly hounded and hunted down by American antisubmarine aircraft until it was either destroyed or departed from the region. Kelshall is particularly insightful in showing how operations, such as the Royal Air Force's attacks on U-boats in the Bay of Biscay and the US Navy's offensive in the Central Atlantic against U-boat tankers, by indicating U-boats while on passage to the West Indies, effectively contributed to Allied history in the Caribbean.

*The U-Boat War in the Caribbean* is more than just an account of the war against the U-boats. The book is full of little but useful asides on the history of the Second World War in the West Indies, such as accounts of the American preparations for the intended — but never carried out — invasion of Martinique and the use of the Gulf of Paria by the US Navy as an area in which to work up major warships. The only blemish on this otherwise fine book is that it is a facsimile edition of a work first published in Trinidad and Tobago and, as such, for reasons of money, was not subjected to the usual high editorial and production standards of the US Naval Institute Press. Nevertheless, *The U-Boat War in the Caribbean* is a first class work of naval history.

DAVID SYRETT

Queens College
City University of New York
Flushing, New York

# Shorter Notices

DIANE FROST, ED., *Ethnic Labour and British Imperial Trade: A History of Ethnic Seafarers in the United Kingdom* (London: Frank Cass, 1995). 145 pages, notes on contributors. Paper. ISBN 0-7146-4185-5. $35.00.

For the most part, the seven papers in this collection originated for a 1992 Liverpool conference, focusing far more on the ethnic labor than the trade indicated in the title. Norma Myers, in a paper on "the black poor of London," concentrates on the Eastern seamen, or "Lascars," who were common visitors to Europe in the eighteenth and nineteenth centuries. Diane

Frost studies West African seamen in Liverpool from the 1880s to the 1960s, and Dick Lawless focuses on Arab seafarers and the Aden agents who recruited and served them in the early twentieth century. Neil Evans concentrates on race riots in British ports in 1919 and their repercussions, while Tony Lane elaborates in a paper on the "Coloured Alien Seamen Order" of 1925. David Byrne follows the "Arab issue" on Tyneside in the twenties and thirties. Marika Sherwood's concluding essay studies three strikes by African seamen in Liverpool during World War II. Although not quite as sweeping in content as the title indicates, this book nevertheless offers unusual material to those interested in ethnic seamen and social problems generally.

GENE ERIC SALECKER, *Disaster on the Mississippi: The* Sultana *Explosion, April 27, 1865* (Annapolis: Naval Institute Press, 1996). xii + 346 pages, illustrations, appendices, bibliography, index. ISBN 1-55750-739-2. $32.50.

The 1865 explosion of the *Sultana* was in fact the worst maritime disaster in US history. Legally registered to carry 376 people, on the morning of the day in question she had 2,000 recently paroled Union prisoners of war aboard, together with another 300 passengers, guards, and crew. A few miles north of Memphis, the overworked boilers exploded and cut the vessel in half, killing more than 1,700 in a particularly grim tragedy that should be better known. Gene Salecker has spent many years collecting data on this event, and his book examines every aspect from the original loading to the subsequent history of the survivors. *Disaster on the Mississippi* must now stand as the definitive work on a grim, if important, subject. A comprehensive appendix (pages 219–290) lists every paroled prisoner by unit, rank, name — and fate.

LOUIS R. HARLAN, *All at Sea: Coming of Age in World War II* (Urbana: University of Illinois Press, 1996). 211 pages, illustrations. Cloth. ISBN 0-252-02232-7. $24.95.

Louis R. Harlan is one of America's most distinguished historians. His two-volume biography of Booker T. Washington won numerous prizes, including the Pulitzer. He has served as president of the American Historical Association, the Organization of American Historians, and the Southern Historical Association — a rare triple honor. This book, as the title indicates, is about his youth, as a newly commissioned ensign whose World War II service throughout was on LCIs (Landing Craft, Infantry). He was at "Dog Red," the worst section of Omaha Beach on D-Day, survived a mistral in the Mediterranean, then crossed the Atlantic once again, then the Pacific to prepare for the landing which, fortunately, never came in the Japanese home islands. Harlan looks back from his emeritus status, but has refreshed his memories with letters and logs to provide a lively and honest account of his experiences, including the frustrations of young love. A masterpiece of World War II history it is not — but it is an entertaining slice of naval life a half century ago.

PAUL STILLWELL, *Battleship* Missouri*: An Illustrated History* (Annapolis: Naval Institute Press, 1996). xiv + 450 pages, illustrations, appendices, index. ISBN 1-55750-780-5. $55.00.

JOHN A. BUTLER, *Strike Able-Peter: The Stranding and Salvage of the USS* Missouri (Annapolis: Naval Institute Press, 1996). xv + 220 pages, illustrations, bibliography, index. ISBN 1-55750-094-0. $31.95.

Two new books from the Naval Institute Press treat the history of the last, and some might argue the most famous, of the US Navy's fifty-seven battleships, from her keel-laying in 1941 to her decommissioning in 1992. From World War II to the Gulf War, the USS *Missouri*'s service was most distinguished, and the Naval

Institute's Paul Stillwell has compiled what must now stand as the definitive history, culled from official records and numerous interviews and supplemented with 370 photographs. The many readers who have appreciated his similar biographies of both the *Arizona* and *New Jersey* will not be disappointed in this new study.

John Butler, on the other hand, concentrates upon the 1950 stranding of the *Missouri* in Chesapeake Bay shortly after leaving Norfolk. It was a mysterious and, for the Navy, a most embarrassing episode, much observed by the media during the very strenuous two weeks of salvage work it took to refloat her. Butler, president of a Maryland consulting firm and former deck officer for various cargo lines (and Navy officer) with degrees in both nautical science and physics, inevitably gives more attention to the event than does Stillwell, although the latter provides a quite comprehensive chapter (pages 145–164) on the subject. Their conclusions really do not differ on the essential point: the *Missouri*'s navigational and command team had put her in the wrong place, and four officers, including her captain, were court-martialed and found culpable.

VIRGINIA STEELE WOOD AND MARY R. BULLARD, EDS., *Journal of a Visit to the Georgia Islands of St. Catherines, Green, Ossaban, Sapelo, St. Simons, Jekyll, and Cumberland, with Comments on the Florida Islands of Amelia, Talbot, and St. George, in 1753* (Macon, GA: Mercer University Press, in association with the Georgia Historical Society, 1996). xvii + 103 pages, illustrations, bibliography, index. ISBN 0-86554-490-5.

The heart of this slim volume is a short journal (nine and a half pages of text) by Jonathan Bryan, a South Carolina planter who pioneered in the development of neighboring Georgia. In his 1753 exploratory trip along the coast by a piragua, with a crew of ten, Bryan visited the various islands and small settlements, living off the land on the way, noting the various resources and conditions suitable for settlement. The result was a valuable period document, previously unpublished, now edited and fully annotated by two scholars who know the area well. Some eighteen maps and illustrations complement the text.

DAVID STEVENS, ED., *The Royal Australian Navy in World War II* (St. Leonards, NSW, Australia: Allen & Unwin, 1996). xxvii + 212 pages, illustrations, maps, notes on contributors, index. ISBN 1-86448-035-1. No price indicated.

David Stevens, Director of Naval Historical Studies for the Royal Australian Navy, has in this useful book collected sixteen essays which offer something for everyone interested in either Australia or World War II. Several offer wider perspectives, such as James Goldrick on Australian naval policy (1939–1945), Jozef Straczek's overview of the Pacific War, Stevens on seapower in the Australian context, Chris Coulthard-Clark on the role of industry, and Alastair Cooper on RAN-RN relations. Others are more specific. Eric Grove on the RAN in the Mediterranean, Bruce Loxton on Savo in retrospect, David Brown on the Pacific bases of the several Royal navies, John Betty on the RAN Hydrographic Branch, and Marsden Hordern on Fairmiles (the handy 90-ton, 18-knot, multi-role small warships). Jason Sears on the background of officers and Kathryn Spurling on the WRANS add an important social dimension. A. W. Grazebrook writes of Vice Admiral Sir J. A. Collins, and Barbara Winter on Commander R. B. M. Long (Naval Intelligence). In conclusion, Frank Broeze, well known to *Neptune* readers, provides a summary of the RAN's role in World War II.

BRITON C. BUSCH

Colgate University
Hamilton, New York

## STATEMENT OF OWNERSHIP, MANAGEMENT AND CIRCULATION

(Required by 39 U.S.C. 3685)

1. Title of Publication: *The American Neptune*
   A. Publication No. *0003-0155.*
2. Date of Filing: *1 November 1996*
3. Frequency of Issue: *Quarterly*
   A. Number of Issues Published Annually: 4
   B. Annual Subscription Price: *$39.00 domestic; $42.00 foreign*
4. Complete Mailing Address of Known Office of Publication: *Peabody Essex Museum, East India Square, Salem, MA 01970-0783.*

5. Complete Mailing Address of the Headquarters Of General Business Offices of the Publisher: *Peabody Essex Museum, East India Square, Salem, MA 01970-0783.*

6. Full Names and Complete Mailing Address of Publisher, Editor and Managing Editor:
   A. Publisher: *Donald S. Marshall, Peabody Essex Museum, East India Square, Salem, MA 01970-0783.*
   B. Editor: *Barry Gough, Department of History, Wilfrid Laurier University, Waterloo, Ontario, N2L 3C5, Canada.*
   C. Managing Editor: *Geraldine Ayers, Peabody Essex Museum, East India Square, Salem, MA 01970-0783.*
7. Owner: *Peabody Essex Museum, East India Square, Salem, MA 01970-0783*
   *President, PO Box 5055, Beverly, MA 01915*
   *Joseph D. Hinkle, Esq. Vice President, Hill & Barlow, 1 International Place, Boston, MA 02110-2607*
8. Known Bondholders, Mortgagees, and Other, Security Holders Owning or Holding 1 Percent or More of Total Amount of Bonds, Mortgages, Or Other Securities: *None.*
9. The Purpose, Function, and Nonprofit Status of This Organization and the Exempt Status for Federal Income Tax Purposes: *Has not changed during the preceding 12 months.*

| | Average Number Copies Each Issue During Preceding 12 Months | Actual Number Copies of Single Issue Published Nearest to Filing Date |
|---|---|---|
| 10. Extent and Nature of Circulation: | | |
| A. Total Number of Copies (*Net Press Run)* | 1,238 | 1,200 |
| B. Paid Circulation | | |
| 1. Sales Through Dealers and Carriers Street Vendors and Counter Sales | 0 | 0 |
| 2. Mail Subscriptions | 868 | 859 |
| C. Total Paid Circulation (*Sum of 10B1 and 10B2*) | 868 | 859 |
| D. Free Distribution by Mail, Carrier or Other Means, Samples, Complimentary, and Other Free Copies | 16 | 16 |
| E. Total Distribution (Sum of C and D) | 884 | 875 |
| F. Copies Not Distributed | | |
| 1. Office Use, Left Over, Unaccounted, Spoiled After Printing | 354 | 325 |
| 2. Return from News Agents | 0 | 0 |
| G. Total (*Sum of E, F1 and 2 — Should Equal Net Press Run Shown in A*) | 1,238 | 1,200 |

11. I certify that the statements made by me are correct and complete.

DONALD S. MARSHALL, *Director of Neptune Publications*

# THE AMERICAN NEPTUNE

*A QUARTERLY JOURNAL OF MARITIME HISTORY AND ARTS*

**Volume 56, 1996**

COPYRIGHT 1997 BY THE PEABODY ESSEX MUSEUM
SALEM, MASSACHUSETTS

*Volume 56, Number 4*

Vol. 56, 1996

ISSN 0003-0155

Editor-in-Chief
**Barry M. Gough**
Wilfrid Laurier University, Ontario

Book Review Editor
**Briton C. Busch**
Colgate University

Maritime Arts and News Editor
**Daniel Finamore**
Peabody Essex Museum

Managing Editor
**Geraldine M. Ayers**
Peabody Essex Museum

Copy and Proofreaders
**Eva Ritter-Walker**
**Merrily Glosband**
Peabody Essex Museum

Editorial Services
**Charles Anezis**
Peabody Essex Museum

Assistant Publisher
**Dori Phillips**
Peabody Essex Museum

Publisher
**Donald S. Marshall**
Peabody Essex Museum

Subscription Services
**Jack Bishop**
Peabody Essex Museum

Advertising Services
**Eva Ritter-Walker**
Peabody Essex Museum

Fulfillment Activities
**Donald A. Hunter**
Peabody Essex Museum

Analysis and Research
**Victor A. Lewinson**
Peabody Essex Museum

**EDITORIAL ADVISORY BOARD**

**James C. Bradford**
Texas A&M University

**Edward G. Brownlee**
Mount Holly, New Jersey

**J. Revell Carr**
Mystic Seaport Museum

**John S. Carter**
Independence Seaport Museum

**Lionel Casson**
New York University

**William M. Fowler, Jr.**
Northeastern University

**Stuart M. Frank**
Kendall Whaling Museum

**Ebenezer Gay**
Rockland, Maine

**John H. Harland**
Kelowna, BC

**John R. Herbert**
Spring Hill, Florida

**S. W. Jackman**
University of Victoria, BC

**Paul F. Johnston**
Smithsonian Institution

**Roger Knight**
National Maritime Museum

**Benjamin Labaree**
Amesbury, MA

**W. J. Lewis Parker**
Captain USCG (Ret.)

**Carla Rahn Phillips**
University of Minnesota

**Philip C. F. Smith**
Bath, Maine

**William N. Still, Jr.**
Kailua-Kona, Hawai'i

**Wilcomb E. Washburn**
Smithsonian Institution

**William D. Wilkinson**
Mariners Museum

*The American Neptune* is published winter, spring, summer, and fall by the Peabody Essex Museum, Incorporated, of Salem, Massachusetts, d/b/a Peabody Essex Museum. Officers of the corporation are: John O. Parker, President; Judith P. Eissner, Vice President, Development; Joseph D. Hinkle, Esq., Vice President; Carter H. Harrison, Vice President and Treasurer; Ronald Jackson; Assistant Treasurer; Lea B. Pendleton, Secretary; Richard Wheatland, II, Chairman of the Overseers.

Support of the journal depends upon receipts from subscriptions; no payment is made for contributions or for editorial work. Subscriptions are accepted for a one-year period and begin with the issue published following receipt of the subscriber's order.

The editors of *The American Neptune* assume editorial responsibility, but they and the Peabody Essex Museum do not necessarily endorse the opinions expressed by authors and book reviewers. "Guidelines for Contributors" to *The American Neptune*, a style sheet for manuscript preparation, will be sent to prospective contributors upon request to the managing editor.

The Peabody Essex Museum gratefully acknowledges the contribution of a grant from Wilfrid Laurier University to assist the Editor-In-Chief in the management and production of this journal.

*The American Neptune* (ISSN 0003-0155) is published quarterly at $39.00 per year for individual domestic subscribers, $45.00 for institutions; $42.00 per year for individual foreign subscribers, $48.00 for foreign institutions; $10.00 per single issue, by the Peabody Essex Museum, East India Square, Salem, Massachusetts, 01970. To subscribe, write to *The American Neptune*, Publications Department, enclosing a check or money order in US dollars and drawn on a US bank made payable to Peabody Essex Museum, or your credit card number (M/C, A/E, or VISA), expiration date, and signature. Manuscripts and editorial correspondence should be addressed to the Managing Editor. Periodical postage is paid at Salem, Massachusetts, and at additional mailing offices. POSTMASTER: Send address changes to *The American Neptune*, Publications Department, Peabody Essex Museum, East India Square, Salem, Massachusetts 01970-3783. Telephone (508) 745-1876, ext. 3172; Fax (508) 744-6776; E-mail dori_phillips@pem.org. Visit our website on the World Wide Web at http://www.pem.org/neptune.

# Contents
# Winter 1996

EDITOR-IN-CHIEF'S NOTE 4

LOTHROP AWARD WINNER ANNOUNCEMENT 6

## ARTICLES

THE RIDDLE OF THE *PORTLAND*: LOST IN THE SOUTH PACIFIC — 1802
by Shirley Hughes 7

GUARDING THE NEW GRANADAN COASTS: DILEMMAS OF THE SPANISH COAST GUARD IN THE EARLY BOURBON PERIOD
by Lance Grahan 19

DANIEL FRENCH AND THE WESTERN STEAMBOAT ENGINE
by Alfred R. Maass 29

RETURN OF THE WOLF PACKS: THE BATTLE FOR ON 113, 23–31 JULY 1942
by Robert C. Fisher 45

READERS' FORUM 63

NEWS 65

CORRECTIONS 66

## BOOK REVIEWS

BRUCE LOXTON WITH CHRIS COULTHARD-CLARK, *The Shame of Savo: Anatomy of a Naval Disaster*
ROBERT J. CRESSMAN 67

ROBERT GARDINER, *The First Frigates: Nine-pounder and Twelve-pounder Frigates, 1748– 1815*
JOHN O. SANDS 68

RICHARD HOUGH, *Captain James Cook: A Biography*
DIRK BALLENDORF 70

WAYNE M. O'LEARY, *The Tancook Schooners: An Island and Its Boats*
ERIC J. RUFF 71

ELINOR DE WIRE, *Guardians of the Lights*
LARRY LOWENTHAL 72

CHARLES M. ROBINSON, III, *Shark of the Confederacy: The Story of the CSS Alabama*
ANNE J. BAILEY 73

ROBERT D. BALLARD WITH SPENCER DUNMORE, *Exploring the Lusitania*
JOHN CHRISTIE 74

H. W. WILSON, *Battleships in Action*
PETER K. H. MISPELKAMP 76

EMILY O. GOLDMAN, *Sunken Treaties: Naval Arms Control Between the Wars*
GREG KENNEDY 77

JERRY E. STRAHAN, *Andrew Jackson Higgins and the Boats that Won the War*
S. W. JACKMAN 78

MELANIE WIGGINS, *Torpedoes in the Gulf: Galveston and the U-Boats, 1942–1943*
JAMES M. MORRIS 79

## SHORTER NOTICES

WILLIAM H. GARZKE, JR. AND ROBERT O. DULIN, JR., *Battleships: United States Battleships, 1935–1992* 80

FRANCIS E. CUPPAGE, *James Cook and the Conquest of Scurvy* 80

STEPHEN FISCHER, ED., *Man and the Maritime Environment* 81

KENNETH G. OLIVER, *Under the Southern Cross: A Petty Officer's Chronicle of the USS Octans* 81

RICHARD W. JUDD, EDWIN A. CHURCHILL, AND JOEL W. EASTMAN, EDS., *Maine: The Pine Tree State from Prehistory of the Present* 81

MENSUN BOUND, ED., *The Archaeology of Ships at War: Based on Papers Presented at an International Conference Held at Greenwich, London, on 31 October – 1 November 1992* 82

WILLIAM H. MILLER, JR., *Pictorial Encyclopedia of Ocean Liners, 1860–1994* 82

EDWARD A. MUELLER, *Upper Mississippi River Rafting Steamboats* 82

BRITON C. BUSCH

# Contents
# Spring 1996

EDITOR-IN-CHIEF'S NOTE 86

## ARTICLES

TRADITIONAL FISHING CRAFT OF THE TIHAMAH AND SOUTHWESTERN ARABIAN COAST
Edward Prados 89

THE INTRODUCTION OF THE REVOLVING TURRET
Arnold A. Putnam 117

THE SEIZURE OF THE *FLYING FISH*
Frederick C. Leiner 131

THE UNITED STATES AND MAURITIUS 1794–1994: A BICENTENNIAL RETROSPECTIVE
Larry W. Bowman 145

*COMMUNICATION*: RECOVERY OF THE CROSSHEAD ENGINE OF THE STEAMBOAT *COLUMBUS*
David C. Holly 163

NEWS 167

## BOOK REVIEWS

ASHIN DAS GUPTA, *Merchants of Maritime India, 1500–1800*
Susan Bean 169

ROBIN KNOX-JOHNSTON, *Cape Horn: A Maritime History*
James E. Valle 170

RICHARD ELLIS, *Monsters of the Sea*
Sherrie L. Lyons 171

PATRICK A. WILDER, *The Battle of Sackett's Harbor*
Ira Dye 172

SHANNON RYAN, *The Ice Hunters: A History of Newfoundland Sealing to 1914*
Leslie Harris 173

IAN MCKAY, *The Quest of the Folk: Antimodernism and Cultural Selection in Twentieth-Century Nova Scotia*
M. Brook Taylor 175

TIM H. BAUGHMAN, *Before the Heroes Came: Antarctica in the 1890s*
Robert K. Headland 177

GEORGE W. BAER, *One Hundred Years of Sea Power: The U.S. Navy, 1890–1990*
William R. Braisted 178

CHARLES W. KOBURGER, JR., *Franco–American Naval Relations, 1940–1945*
J. Stuart Thomson 179

CARL LAVO, *Back from the Deep: The Strange Story of the Sister Subs Squalus and Sculpin*
Fraser M. McKee 180

BRENDAN WHITING, *Ship of Courage: The Epic Story of HMAS Perth and her Crew*
Bob Nicholls 181

WAYMAN C. MULLINS, ED., *1942: "Issues in Doubt," A Symposium of the War in the Pacific*
Charles Dana Gibson 183

MICHAEL JOE CARLIN, *Trial: Ordeal of the USS Enterprise 14 January 1969*
by Malcolm Muir, Jr. 184

## SHORTER NOTICES

LIONEL CASSON, *Ships and Seamanship in the Ancient World* 185

WILLIAM C. FLEETWOOD, JR., *Tidecraft: The Boats of South Carolina, Georgia and Northeastern Florida, 1550–1950* 185

COLIN WHITE, ED., *The Nelson Companion* 186

KEITH STEWART THOMPSON, *HMS "Beagle": The Story of Darwin's Ship* 186

BRITON C. BUSCH

# Contents
# Summer 1996

EDITOR-IN-CHIEF'S NOTE 190

## ARTICLES

A TUGMAN'S STORY: LIFE AND TIMES OF B. B. INMAN
by Al Miller 191

THE UNITED STATES NAVY BOARDING RATTLE: A UNIQUE ITEM OF NINETEENTH CENTURY US NAVAL ORDNANCE
by William J. Urick III 215

WILLIAM A. MOFFETT AND HIS "DISASTROUS DIRIGIBLES"
by Paolo E. Coletta 227

A HOME ON THE SUBLIME: TRANS-OCEANIC PERSPECTIVES
by Theodore I. Erski 235

HOW WE BUILT SHIPS ON COOPER'S POINT BEFORE WWII: A TRIBUTE TO GEORGE R. TAYLOR, SHIPBUILDER
by Edward G. Brownlee 245

*MUSEUM FOCUS:* MARINE MUSEUM OF THE GREAT LAKES AT KINGSTON, ARCHIVAL AND LIBRARY COLLECTIONS 269

NEWS 276

READERS' FORUM 279

## BOOK REVIEWS

RINA PRENTICE, *A Celebration of the Sea: The Decorative Arts Collections of the National Maritime Museum*
Daniel L. Finamore 281

Donald G. Shomette, *Tidewater Time Capsule: History Beneath the Patuxent*
Richard W. Lawrence 282

ROBERT F. ROGERS, *Destiny's Landfall: A History of Guam*
David A. Chappell 283

JAY BARNES, *North Carolina's Hurricane History*
Alan D. Watson 284

CHESTER G. HEARN, *George Washington's Schooners: The First American Navy*
Jonathan R. Dull 286

WILLIAM M. FOWLER, JR., *Silas Talbot: Captain of Old Ironsides*
Frederick C. Leiner 286

WILLIAM DIETRICH, *Northwest Passage: The Great Columbia River*
Barry Gough 287

ELIZABETH A. SCHULTZ, *Unpainted to the Last: Moby Dick and Twentieth Century American Art*
Richard Ellis 288

MICHAEL DUFFY, ED., *Parameters of British Power, 1650–1850*
Daniel A. Baugh 290

NORMAN E. KLARE, *The Final Voyage of the* Central America, *1857*
Charles R. Schultz 291

CHARLES DANA GIBSON WITH E. KAY GIBSON, *Assault and Logistics: Union Army Coastal and River Operations, 1861–1866*
Norman C. Delaney 292

PEGGY AND HAROLD SAMUELS, *Remembering the* Maine
Stanley Sandler 293

BOB NICHOLLS, *Statesmen and Sailors: Australian Maritime Defence, 1870–1920*
Greg Kennedy 294

GEORGE WOODMAN HILTON, *Eastland: Legacy of the* Titanic
Paul T. Burlin 295

RICHARD W. FANNING, *Peace and Disarmament: Naval Rivalry and Arms Control, 1922–1933*
Michael Simpson 297

MICHAEL L. HADLEY, *Count Not the Dead: The Popular Image of the German Submarine*
Eric C. Rust 298

C. W. KOBURGER, JR., *Naval Warfare in the Baltic, 1939–1945: War in a Narrow Sea*
Eric C. Rust 299

STEPHEN D. REGAN, *In Bitter Tempest: The Biography of Admiral Frank Jack Fletcher*
Frank Uhlig, Jr. 301

JEFFREY G. BARLOW, *Revolt of the Admirals: The Fight for Naval Aviation, 1945–1950*
David R. Mets 302

GAYLORD T. M. KELSHALL, *The U-Boat war in the Caribbean*
David Syrett 304

ADMIRAL I. J. GALANTIN, USN (RET.), *Submarine Admiral: From Battlewagons to Ballistic Missiles*
Clark G. Reynolds 305

GEORGE J. JOACHIM, *Iron Fleet: The Great Lakes in World War II*
Jay C. Martin 306

## SHORTER NOTICES

DILWYN JONES, *Boats* 307

JOHN B. HATTENDORF, ED., *Maritime History, Volume 1: The Age of Discovery* 307

COMMANDER ROBERT A. DAWES, JR., USN (RET.), *The Dragon's Breath: Hurricane at Sea* 307

ROBERT M. BROWNING, JR., *U.S. Merchant Vessel War Casualties of World War II* 308

BRENDAN A. MAHER, *A Passage to Sword Beach: Minesweeping in the Royal Navy* 308

KEITH NEILSON AND ELIZABETH JAN ERRINGTON, EDS., *Navies and Global Defense: Theories and Strategy* 308

BRITON C. BUSCH

# Contents
# Fall 1996

EDITOR-IN-CHIEF'S NOTE 314

## ARTICLES

THE MARITIME CHARACTER OF MINOAN CIVILIZATION
by Clark G. Reynolds 315

FRANK THOMAS BULLEN, 1857–1915: WHALING AND NONFICTION MARITIME WRITING
by Alston Kennerley 353

AN EARLY ANTARCTIC LANDING: CAPTAIN COOPER'S LOG OF THE *LEVANT*, 1853
by Robert Keith Headland 371

WHERE DID THE MUTINY ON THE *BOUNTY* OCCUR?
by Raymond James Maloney 381

NEWS 389
READERS' FORUM 391

## BOOK REVIEWS

IAN FRIEL, *The Good Ship, Shipbuilding and Technology in England 1200–1520*
Frederick M. Hocker 393

RICHARD HARDING, *The Evolution of the Sailing Navy, 1509–1815*
Richard Eddy 394

ROBERT S. WEDDLE, *Changing Tides: Twilight and Dawn in the Spanish Sea, 1763–1803*
Peter C. Mancall 395

DAVID HANCOCK, *Citizens of the World: London Merchants and the Integration of the British Atlantic Comunity, 1735–1785*
Walter Minchinton 396

ROBERT L. HERBERT, *Monet on the Normandy Coast: Tourism and Painting, 1867–1886*
John R. Stilgoe 397

JAMES PRITCHARD, *Anatomy of a Naval Disaster: The 1746 French Naval Expedition to North America*
Jonathan R. Dull 398

JOHN DUNMORE, TRANSLATOR, ED., *The Journal of Jean-François de Galaup de la Pérouse, 1785–1877*
Harry Kelsey 400

DANA A. STORY, *The Shipbuilders of Essex: A Chronicle of Yankee Endeavor*
Nathan R. Lipfert 401

SHELDON S. COHEN, *Yankee Sailors in British Gaols: Prisoners of War at Forton and Mill, 1773–1783*
Paul A. Gilje 402

HAROLD D. LANGLEY, *A History of Medicine in the Early U.S. Navy*
Frederick Leiner 404

ROBERT J. SCHNELLER, JR., *A Quest for Glory: A Biography of Rear Admiral John A. Dahlgren*
Spencer C. Tucker 404

CHESTER G. HEARN, *The Capture of New Orleans, 1862*
Royce Shingleton 405

KEITH YATES, *Graf Spee's Raiders: Challenge to the Royal Navy, 1914–1915*
David French 406

MALCOLM R. MURFETT, ED., *The First Sea Lords: From Fisher to Mountbatten*
Keith Neilson 407

JAMES F. CALVERT, *Silent Running: My Years on a World War II Attack Submarine*
Carl Boyd 408

JOHN BUNKER, *Heroes in Dungarees: The Story of the American Merchant Marine in World War II*
Charles Dana Gibson 409

EDWARD L. BEACH, *Scapegoats: a Defense of Kimmel and Short at Pearl Harbor*
Robert W. Love, Jr. 411

GAYLORD T. M. KELSHALL, *The U-Boat War in the Caribbean*
David Syrett 413

## SHORTER NOTICES

DIANE FROST, ED., *Ethnic Labour and British Imperial Trade: A History of Ethnic Seafarers in the United Kingdom* 413

GENE ERIC SALECKER, Disaster on the Mississippi: The Sultana *Explosion, April 27, 1865* 414

LOUIS R. HARLAN, *All at Sea: Coming of Age in World War II* 414

PAUL STILLWELL, *Battleship* Missouri*: An Illustrated History* 414

JOHN A. BUTLER, *Strike Able-Peter: The Stranding and Salvage of the USS* Missouri 414

VIRGINIA STEELE WOOD AND MARY R. BULLARD, EDS., *Journal of a Visit to the Georgia Islands of St. Catherines, Green, Ossaban, Sapelo, St. Simons, Jekyll, and Cumberland, with Comments on the Florida Islands of Amelia, Talbot, and St. George, in 1753* 415

DAVID STEVENS, ED., *The Royal Australian Navy in World War II* 415

BRITON C. BUSCH

# Index to Volume 56 of *The American Neptune*


*A. H. Dumont,* motor tanker, photo of, 264
*Abe Lincoln,* schooner, 193
Adams, John, 31
*Aetna,* steamboat (1814), 36
Agassiz, Louis, Museum of Comparative Zoology, 149
Akrotiri site on Thera Island (Minoan Crete), restored frescoes from, cover of *The American Neptune,* Fall 1996 (56:4) (Courtesy of Spyridon Marinatos); also 332, 333, 334
*Akron,* ZRS-4 airship, 232
Alexander, Leslie (US Ambassador to Mauritius), 159
*Alexander Henry,* museum ship, 275
Alexander Henry Collection, The, 271, 272
*Alexander McDougall,* steamer (*1899*), 209
*All at Sea: Coming of Age in World War II,* by Louis R. Harlan, reviewed, 414
*Alligator,* sloop of war, 138
*Amboy,* tug, 266
Amnisos, Crete (port in 17th century BC) contemporary photo by author, 324
*Anatomy of a Naval Disaster: The 1746 French Naval Expedtion to North America,* by James Pritchard, reviewed, 398
*Andrew Jackson Higgins and the Boats That Won the War,* by Jerry E. Strahan, reviewed, 78
"An Early Antarctic Landing: Captain Cooper's Log of the *Levant,* 1853," by Robert Keith Headland, 371–381
*Annapolis,* HMCS town-class destroyer, 55
*Annapolis,* school ship, 258
*Annie C. Grace,* 3-masted schooner (1880), 252
*Annie Falconer,* underwater wreck, 274
Antarctic: sketches of coast of the South Continent, 376, 377, 378
*Antarctic,* whaler (*1894*), 379
*Arabella,* coffin ship (*1869*), 362
*Archaeology of Ships at War: Based on Papers presented at an International Conference Held at Greenwich, London, on 31 October – 1 November 1992, The,* Edited by Mensun Bound, reviewed, 82
*Ariel,* excursion steamer (*1893*), 203
*Arthur Orr,* steamer (*1898*), 209
*Assault and Logistics: Union Army Coastal and River Operations, 1861–1866,* by Charles Dana Gibson and Kay Gibson, reviewed, 292
*Astrolabe,* ship (*1840*), 373
*Aunt Becky,* see *Rebecca*

*B. B. Inman,* tug (*1897*), 208
*Back from the Deep: The Strange Story of the Sister Subs* Squalus *and* Sculpin, by Fraser M. McKee, reviewed, 180
Baer, George W., *One Hundred Years of Power: The U.S. Navy, 1890–1990,* reviewed, 178
Bailey, Anne J., review by, 73
Bailey, Richard (part-time captain of *Bounty*), 386
Ballard, Robert D. with Spencer Dunmore, *Exploring the* Lusitania, reviewed, 74
Ballendorf, Dirk, review by, 70
Baltimore Steam Packet Company, 165

*Barge 101,* whaleback (*1888*), 198
*Barge 102,* whaleback barge (*1892*), 202
*Barge 107,* steamer (*1891*), 201
*Barge 115* (*1899*), 210
Barlow, Jeffrey G., *Revolt of the Admirals: The Fight for Naval Aviation, 1945–1950,* reviewed, 302
*Barlum,* steamer (*1891*), 201
Barnaby, Nathaniel (Naval Architect), 128
Barnes, Jay, *North Carolina's Hurricane History,* reviewed, 284
Bateman Collection, The, 270
*Battle of Sackett's Harbor, The,* by Patrick A. Wilder, reviewed, 172
*Battleship* Missouri: *An Illustrated History,* by Paul Stillwell, reviewed, 414
*Battleships: United States Battleships, 1935–1952,* by Robert O. Dulin, Jr. and William H. Garzke, Jr., reviewed, 80
*Battleships in Action,* by H. W. Wilson, reviewed, 76
Baugh, Daniel A., review by, 290
Baughman, Tim H., *Before the Heroes Came: Antarctica in the 1890s,* reviewed, 177
B-dienst, German naval intelligence branch, 47
Beach, Edward L., *Scapegoats: A Defense of Kimmel and Short at Pearl Harbor,* reviewed, 411
Bean, Dr. Susan, review by, 169
*Before the Heroes Came: Antarctica in the 1890s,* by Tim H. Baughman, reviewed, 177
*Belle,* steamer, 193
*Benjamin,* ship (*1793*), 151
Benson, Captain Fred, 204
Benton, Erasmus W. (chief engineer), 37
Birch, Thomas (American artist), "Naval Engagement USS *Wasp* and HMS *Frolic,*" (photo by Mark Sexton) cover of *The American Neptune,* Summer 1996 (56:3)
Blas de Lezo, Lieutenant General, 19
Bligh, Captain William, 383
Bloodgood, Abraham, 117
*Boats,* by Dilwyn Jones, reviewed, 307
*Bob Anderson,* tug (*1893*), 203
Bomb-Lance: photo of firing of, 357
Book Reviews: 67–82; 169–186; 281–309; 393–415
Boolell, Sir Sateam (of Mauritius), 158
Bopst, Kapitänleutnant Eberhard, 50
*Boston,* 32-gun frigate (*1799*), 131; print of, 132
Boudinot, Elisha, 33
Bound, Mensun, Editor, *The Archaeology of Ships at War: Based on Papers Presented at an International Conference Held at Greenwich, London, on 31 October – 1 November 1992,* reviewed, 82
*Bounty,* HMS (*1789*), 383, 367
Bowen, Richard LeBaron, Jr., 89
Bowes, Thomas D., 261
Bowman, Larry W., Notes by, 160–162; "The United States and Mauritius 1794–1994: A Bicentennial Retrospective," 145–159
Boyd, Carl, review by, 408
Boyer, Captain Lewis, 261
Boyes-Sykes Collection, The, 271
Bradford, Samuel (US Marshall), 137
Brais photo collection, 274
Braisted, William R., review by, 178
*Brandon,* HMCS flower-class corvette, 49
*Brilliant,* steam tug (*1938*), 253
*British Merit,* SS tanker, 51
*British R-38,* airship (American ZR-2), 228
*Broompark,* SS tanker, 52
Brown, Captain James, 206
Browning, Robert M., Jr., *U.S. Merchant Vessel War Casualties of World War II,* reviewed, 308
Brownlee, Edward G., "How We Built Ships on Cooper's Point Before WWII: A Tribute to George R. Taylor, Shipbuilder," 245–267
Brownsville Steam Boat Company, 39
Bruce, Sir Charles, Governor of Mauritius, 156
*Buffalo,* tug, photo of, 194
Bull, Henrick Johan, 379
Bullard, Mary R. and Virginia Steele Wood, Editors, *Journal of a Visit to the Georgia Islands of St. Catherines, Green, Ossaban, Sapelo, St. Simons, Jekyll, and Cumberland, with Comments on the Florida Islands of Amelia, Talbot, and St. George, in 1753,* reviewed, 415
Bullen, Frank Thomas, 1901 photo of, 353; *Cruise of the "Cachalot"* and other writings, see 353 ff.; and see "Frank Thomas Bullen, 1857–1915: Whaling and

Nonfiction Maritime Writing," by Alston Kennerley, 353–370
Bunker, John, *Heroes in Dungarees: The Story of the American Merchant Marine in World War II,* reviewed, 409
Burlin, Paul T., review by, 295
*Burnham,* HMS town-class destroyer, 49, 54
Busch, Briton C., reviews by, 80, 81, 82, 185–186, 307–308, 413–415; mentioned, 147
Bushey, Francis and Ira S. Bushey, photo of, 254
Bushey, Ira S. and Francis Bushey, photo of, 254
Bussey, Benjamin, Boston ship owner, 9
Butler, John A., *Strike Able-Peter: The Stranding and Salvage of the USS* Missouri, reviewed, 414

C. C. Calvin photo collection, 273
*Cachalot,* fictional American ship, 354 ff.; illustration of track on cruise, 356
Cahoon, Thomas, 31
*Calgary,* HMCS corvette, 55
Calvert, James F., *Silent Running: My Years on a World War II Attack Submarine,* reviewed, 408
Calvin Timber and Shipping Company, The, 273
Campbell photo collection, 274
Canada Steamship Lines, 272, 273
Canadian Dredge and Dock Shipyard records, 270, 271
Canadian Shipbuilding and Engineering Collection, 271
Canadian Vickers Shipyard, 271
*Cape Horn: A Maritime History,* by Robin Knox-Johnston, reviewed, 170
*Captain,* ironclad (*1870*), 127
*Captain Collier,* tank barge, 256
*Captain James Cook: A Biography,* by Richard Hough, reviewed, 70
*Capture of New Orleans, 1862, The,* by Chester G. Hearn, reviewed, 405
*Caraquette,* ship from London (*1822*), 373
Carbine, Captain Tim, 204
Carlin, Michael Joe, *Trial: Ordeal of the USS* Enterprise *14 January 1969,* reviewed, 184
Carson, John P., photo of (with Harry Sheridan and Jimmy Gravenor), 251
Casey, James, 30
Casson, Lionel, mentioned, 333; *Ships and Seamanship in the Ancient World,* reviewed, 185
*Catania,* tank barge, 256
*Cayuga,* ship, 270
*Cecilia,* shallop from Nantucket (*1821*), 373
*Celebration of the Sea: The Decorative Arts Collections of the National Maritime Museum, A,* by Rina Prentice, reviewed, 281
Chaffee, Captain Israel (Ezra), master of *Portland* (*1800*), 9
*Champion,* tug (*1874*), 193
*Changing Tides, Twilight and Dawn in the Spanish Sea, 1763–1803,* by Robert S. Weddle, reviewed, 395
Chapell, David A., review by, 283
*Charlotte Dundas,* steam tugboat (1802), 40
Cheops Boat (ca. BC 2550), 101
*Chesapeake,* US frigate (*1813*), 216
*Chicoutimia,* HMCS corvette, 55
Christie, John, review by, 74
Churchill, Edwin A., Richard W. Judd, and Joel W. Eastman, Editors, *Maine: The Pine Tree State from Prehistory to the Present,* reviewed, 81
*Cities Service No. 6,* barge, 257
*Citizens of the World: London Merchants and the Integration of the British Atlantic Community, 1735–1785,* by David Hancock, reviewed, 396
*City of Cleveland,* steamer (*1889*), 198
*City of Rome,* steamer (*1885*), 196
Clark, Robert, 39
Clausen, Charles C., 245
*Clematis,* tug (*1823*), 193
Clemens, Samuel L. (Mark Twain), photo of, 154
*Clermont* (*North River Steamboat*) (*1840*), 163
Cohen, Sheldon S., *Yankee Sailors in British Gaols: Prisoners of War at Forton and Mill, 1773–1783,* reviewed, 402
Coles, Captain Cowper Phipps, 119
Coletta, Paolo E., "William A. Moffett and His 'Disastrous Dirigibles,'" 227–234
*Colgate Hoyt,* whaleback steamer (*1890*), 201

*Collier,* self-unloader (1924), 270
*Collier,* tank barge (1911), 256
Collingwood Shipyard Collection, 270, 273
*Colorado,* US steam frigate (*1863*), 220
*Columbia,* HMCS destroyer, 55
*Columbus,* barque (*1877*), 360
*Columbus,* steamboat (*1828*), 163–166. Crosshead engine of: photo, 164; diagram, 165
*Comet,* stern paddle wheel boat (1813), 36
*Concord,* steamer, 193
*Conemaugh,* US steamer (*1863*), 220
CONNAV: see US Navy Convoy and Routing Section
*Conquistador,* Cartagena warship (*1737*), 20
*Constellation,* USS, Note by H. Hobart Holly, 63
Cook, Captain James, 371; Cape Town voyage of (1777), 13; *James Cook and the Conquest of Scurvy,* by Francis E. Cuppage, reviewed, 80; *Captain James Cook: A Biography,* by Richard Hough, reviewed, 70
Cooper, William, 34
*Copperfield,* 4-masted schooner, 246
*Cora B.,* tug (*1885*), 197
Corbin photo collection, 273
*Cornell,* freighter (1901), 211
Coulterhard-Clark, Chris, with Bruce Loxton, *The Shame of Savo: Anatomy of a Naval Disaster,* reviewed, 67
*Count Not the Dead: The Popular Image of the German Submarine,* by Michael L. Hadley, reviewed, 298
Coyle, Eugene A., Note by, 64
Cressman, Robert J., review by, 67
Crete: *see* Minoan civilization. Map of, 316
*Cronberg,* Danish ship (*1800*), 151
Crosse, Commander RDS, RN Staff Offcer, 57
*Cruise of the "Cachalot,"* by Frank Thomas Bullen, 353 ff.
Cuppage, Francis E., *James Cook and the Conquest of Scurvy,* reviewed, 80

Dahlgren, Rear Admiral John A. See *A Quest for Glory: A Biography of Rear Admiral John A. Dahlgren,* by Robert J. Schneller, Jr., reviewed, 404
"Dancing Between Decks," 1881 illustration, 240
*Dartmouth,* barque (1877), 360
Das Gupta, Ashin, *Merchants of India, 1500–1800,* reviewed, 169
*Dauphin,* HMCS flower-class corvette K-157, 54; photo of, 46
Davidson, Captain James, 210
*David Sutton,* fireboat (*1885*), 197
Dawes, Commander Robert, A. Jr. (USN-Ret.), *The Dragon's Breath: Hurricane at Sea,* reviewed, 307
Dayes, Edward, drawing of Sydney Cove in 1802, 14
*Defense,* steam-powered ironclad (*1861*), 122
Delaney, Norman C., review by, 292
*Delia Maria,* ship, 239
Dempster, Grace Amelia, 193
Denby, Edwin, Secretary of the Navy, 229
Derby, Elias Hasket, 150
*Destiny's Landfall: A History of Guam,* by Robert F. Rogers, reviewed, 283
Detroit Dry Dock Company, 208
*Devastation,* HMS, photo of, 126, 127
De Wire, Elinor, *Guardians of the Lights,* reviewed, 72
Dexter, Samuel, Jr., lithograph of, 136
*Dictator,* ironclad ram (*1854*), 120
Dietrich, William, *Northwest Passage: The Great Columbia River,* reviewed, 287
"Dippy" or disappearing propeller boat (*1916–1926*), 190
*Disaster on the Mississippi: The* Sultana *Explosion, April 27, 1865,* by Gene Eric Salecker, reviewed, 414
*Dispatch,* steamboat (1814), 37
Dobson, Lieutenant-Commander Andrew H., RCNR, 50
Dönitz, Admiral Karl, Commander-in-Chief of U-boats, 46
*Dragon,* ship from London, 373
*Dragon's Breath, Hurricane at Sea, The,* by Commander Robert A. Dawes, Jr., reviewed, 307
Drayton, Commander Percival, 122
*Dreadnaught,* gasoline-powered motorboat (*1904*),190
*Drumheller,* HMCS flower-class corvette, 49
Duffy, Michael, Editor, *Parameters of British*

*Power, 1650–1850,* reviewed, 290
*Duke of Portland,* ship (*1804*), 8
Dulin, Robert O., Jr. and William H. Garzke, Jr., *Battleships: United States Battleships, 1935–1992,* reviewed, 80
Dull, Jonathan R., reviews by, 286, 398
Dunmore, John (Translator and Editor), *The Journal of Jean-François de Galaup de la Pérouse, 1785–1877,* reviewed, 400
Dunmore, Spencer with Robert D. Ballard, *Exploring the* Lusitania, reviewed, 74
Dunne, W. M. P., Ph.D. (1934–1995), Memoriam Note to, 63
Duval, Sir Gaetan (of Mauritius), 158
Dye, Ira, review by, 172
Dykes, Jeffrey, photographer of painting by John Webber, cover of *The American Neptune,* Winter 1996 (56:1)

*E. B. Hale,* steamer (*1891*), 201
*E. M. Carrington,* schooner, 193
Eakins photo collection, 274
*Eastland Legacy of the* Titanic, by George Woodman Hilton, reviewed, 295
Eastman, Joel W., Richard W. Judd, Edwin A. Churchill, Editors, *Maine: The Pine Tree State from Prehistory to the Present,* reviewed, 81
Eddy, Richard, review by, 394
Edelman, Bill, 249
Editor-in-Chief's Note, by Barry Gough, 190
Eliza, maid to Elizabeth Morey, 7–15
*Eliza Adams,* whaler, 367
*Eliza Williams,* tug (*1886*), 197
*Ella G. Stone,* railroad tug (*1889*), 199
Ellis, Richard, review by, 288; *Monsters of the Sea,* reviewed, 171
Elmslie, John, of Pennsylvania (US Consul), 11
Ely, Edward, 238
*Emerillon,* ocean-going tanker, 271
*Emperador,* brig (*1801*), 10
*Empire Rainbow,* SS merchant ship, 54
*Enterprize,* steamboat (1814), 36
*Erebus,* HMS (1843), 373
Ericsson, John, 119
*Ericsson,* whaleback, 270
Errington, Elizabeth Jan, and Keith Neilson, Editors, *Navies and Global Defense: Theories and Strategy,* reviewed, 308
Erski, Theodore I., "A Home on the Sublime: Trans-Oceanic Perspectives," 235–244
*Ethnic Labour and British Imperial Trade: A History of Ethnic Seafarers in the United Kingdom,* by Diane Frost, reviewed, 413
Evans, George, 35
Evans, Oliver, 31
*Evolution of the Sailing Navy, 1509–1815, The,* by Richard Harding, reviewed, 394
Excavated Thera fresco depicting ships, photo of, 332

*F. A. Verdon,* coastal tanker (1938), 262; photo of, 265
*F. H. Standwood,* tug (*1893*), 203
*F. L. Danforth,* tug (*1886*), 197
Fairbanks Morse of Beloit, Wisconsin, 263
Fairfield, George F., 147
Fanning, Richard W., *Peace and Disarmament: Naval Rivalry and Arms Control, 1922–1933,* reviewed, 297
Farnum, George M., 148
*Fearnaught,* gasoline-powered motorboat (*1904*), 190
Fidalgo, Pedro José (Governor of Cartagena 1737–1739), 21
*Final Voyage of the* Central America, *1857, The,* by Norman E. Klare, reviewed, 290
Finamore, Dr. Daniel, review by, 281
Finston, Jeff (first mate of *Bounty*), 386
*First Frigates: Nine-pounder and Twelve-pounder Frigates, 1748–1815, The,* by Robert Gardiner, reviewed, 68
*First Sea Lords: From Fisher to Mountbatten, The,* Edited by Malcolm R. Murfett, reviewed, 407
Fischer, Stephen, Editor, *Man and the Maritime Environment,* reviewed, 81
Fisher, Robert C., "Return of the Wolf Packs: The Battle for ON 113, 23–31 July 1942," 45–59
Fitch, John, 29
Five Power Naval Disarmament Treaty of 1922, 228
Fleetwood, William C., Jr., *Tidecraft: The Boats of South Carolina and Northeastern*

*Florida, 1550–1950,* reviewed, 185
Fletcher, William, 261
*Flying Fish,* Bermuda-built brigantine (*1799*), 131
Fontenoy, Paul E., 1995 winner of Francis B. Lothrop Award, 6
Foueaux, Major Joseph, prison commandant, 13
Fowler, William M. Jr., *Silas Talbot: Captain of Old Ironsides,* reviewed, 286
Fox, Gustavus, Assistant Secretary of the Navy, 120
Frame fastened to hull, photo of, 105
Framing pattern, sketch of, 106
Francis Bannerman & Company, 222
*Franco-American Naval Relations, 1940–1945,* by Charles W. Koburger, Jr., reviewed, 179
*Franklin,* ship (*1795*), 9
Frank Thomas "Frank Thomas Bullen, 1857–1915: Whaling and Nonfiction Maritime Writing," by Alston Kennerley, 353–370
Frederick McConnell Co., The, 272
French, Daniel, 29–34
French, David, review by, 406
Fresco from Akrotiri on Thera Island (Minoan Crete) c. 1628 BC (drawing of reconstruction), Cover of *The American Neptune,* Fall 1996 (56:4); also 332, 333, 334
Friel, Ian, *The Good Ship, Shipbuilding and Technology in England 1200–1520,* reviewed, 393
*Frisky,* USS naval tug, 52
*Frolic,* HMS sloop (*1812*), painting by Thomas Birch, cover of Summer 1996 (56:3)
Frost, Diane, *Ethnic Labour and British Imperial Trade: A History of Ethnic Seafarers in the United Kingdom,* reviewed, 413
*Fuerte,* Cartagena warship (*1737*), 20
Fulton, Robert, 33; Fulton's bell crank engine, sketch of, 32

Galantin, Admiral I. J. (USN-Ret.), *Submarine Admiral: From Battlewagons to Ballistic Missiles,* reviewed, 305
Gardiner, Robert, *The First Frigates: Nine-pounder and Twelve-pounder Frigates, 1748–1815,* reviewed, 68
Garzke, William H., Jr. and Robert O. Dulin, Jr., *Battleships: United States Battleships, 1935–1992,* reviewed, 80
*General Greene,* warship (*1799*), 131
George Brough photo collection, 274
*George E. Brockway,* tug (*1870*), 193
*George F. Williams,* steamer (*1893*), 204
*George Washington's Schooners: The First American Navy,* by Chester G. Hearn, reviewed, 286
German and Milne Collection, The, 271
Gibson, Charles Dana, reviews by, 183, 409
Gibson, Charles Dana with Kay Gibson, *Assault and Logistics: Union Army Coastal and River Operations, 1861–1866,* reviewed, 292
Gibson, Kay with Charles Dana Gibson, *Assault and Logistics: Union Army Coastal and River Operations, 1861–1866,* reviewed, 292
Gilje, Paul A., review by, 402
Gilkerson, William, 217
Gill, Commodore Roy, RNR convoy commander, 58
Gillespie, Neal, 39
Gillmer, Thomas C. (naval architect), 331
Gilman, Edward, 242
*Glad Tidings,* tug (*1893*), 203
Goldman, Emily O., *Sunken Treaties: Naval Arms Control Between the Wars,* reviewed, 77
Goodman, Samuel, 133
*Good Ship, Shipbuilding and Technology in England 1200–1520, The,* by Ian Friel, reviewed, 393
Goodwin, Dr. R. Christopher, 163
Goodyear Rubber and Tire Co., 228
Gordon, Sir Arthur, English Governor, 150
Gough, Barry: Editor-in-Chief's Notes, 4, 86, 190, 314; review by, 287; "Museum Focus: Marine Museum of the Great Lakes at Kingston," 269–275
*Graf Spee's Raiders, Challenge to the Royal Navy, 1914–1915,* by Keith Yates, reviewed, 406
Grahn, Lance, "Guarding the New Granadan Coasts: Dilemmas of the Spanish Coast

Guard in the Early Bourbon Period," 9–27
*Grand Turk,* ship (*1786*), 150
*Grave of Harriet Newell, Isle of France,* engraving, 154
Great Lakes Towing Company, 209
Greene, Welcome Arnold, 236
Gregg, Captain Israel, 36
*Grey Oak,* tug (*1893*), 203
Griffths, Commander George H., RCN escort commander, 58
Group *Pirat,* German submarines, 57
Group *Steinbrink,* German submarines, 57
Group *Wolf,* German U-boats (U-71, U-86, U-90, U-379, U-552, U-559, and U-704), 47; return of wolf packs to shipping lanes in 1942, 47
*Guardians of the Lights,* by Elinor De Wire, reviewed, 72
"Guarding the New Granadan Coasts: Dilemmas of the Spanish Coast Guard in the Early Bourbon Period," by Lance Grahn, 9–27
*Guido Pfister,* schooner (*1885*), 196
*Gull,* yacht, 262

*H.M.S.* Beagle: *The Story of Darwin's Ship,* by Keith Stewart Thompson, reviewed, 186
Hadley, Michael L., *Count Not the Dead: The Popular Image of the German Submarine,* reviewed, 298
*Hamonic,* passenger ship, 270
Hancock, David, *Citizens of the World: London Merchants and the Integration of the British Atlantic Community, 1735–1785,* reviewed, 396
*Hannah Moore,* schooner-rigged scow, 193
*Harbinger,* steel-built ship (*1879*), 362
Harding, Richard, *The Evolution of the Sailing Navy, 1509–1815,* reviewed, 394
Harlan, Louis R., *All at Sea: Coming of Age in World War II,* reviewed, 414
*Harpefjell,* merchant steamship, 51
Harris, Leslie, review by, 173
Harrison, John C. (British Commissioner to Mauritius), 159
Haswell, Lt. Robert, photo of, 135
Hattendorf, John B., Editor, *Maritime History, Volume I: The Age of Discovery,* reviewed, 307
Hawkins, Clifford, 93
Headland, Robert K., review by, 177–178
Headland, Robert Keith, "An Early Antarctic Landing: Captain Cooper's Log of the *Levant,* 1853," 371–381
Hearn, Chester G., *The Capture of New Orleans, 1862,* reviewed, 405; *George Washington's Schooners: The First American Navy,* reviewed, 286
*Hecla,* whaling bark (*1871*), 148
*Henry Chisholm,* steamer (*1898*), 209
Herbert, Robert L., *Monet on the Normandy Coast: Tourism and Painting, 1867–1886,* reviewed, 397
*Hercules,* Boston ship (*1832*), 147
*Heret,* ship (*1879*), 362
*Heroes in Dungarees: The Story of the American Merchant Marine in World War II,* by John Bunker, reviewed, 409
*Hiawatha,* steamer (*1882*), 195
Higgins, Andrew J., *Andrew Jackson Higgins and the Boats That Won the War,* by Jerry E. Strahan, reviewed, 78
Hillyer, Edwin, 238
Hilton, George Woodman, *Eastland Legacy of the* Titanic, reviewed, 295
Hinson, Nicholas, ship master, 131
*History of Medicine in the Early U.S. Navy, A,* by Harold D. Langley, reviewed, 404
Hocker, Frederick M., review by, 394
Holly, David C., "Recovery of the Crosshead Engine of the Steamboat *Columbus,*" 163–166
"Home on the Sublime: Trans-Oceanic Perspectives, A," by Theodore I. Erski, 235–244
*Hope,* barque, 241
*Hope,* ship (1806), 15
Hornell, James, maritime specialist, 100
Hough, Richard, *Captain James Cook: A Biography,* reviewed, 70
Howard-Johnson, Commander C. D., RN Staff Offcer, 58
"How We Built Ships on Cooper's Point Before WWII: A Tribute to George R. Taylor, Shipbuilder," by Edward G. Brownlee, 245–267
Hughes, Shirley, "The Riddle of the *Portland*

Lost in the South Pacific – 1802," 7–17
Hull of inverted ship, photo of, 331
*Huri* (pl. is *huwari*), Yemeni dugout boat: line drawing of double-ended, 96; Lines of transom-sterned, 97; photos, 95, 98
*Huronic,* passenger ship, 270
Hutchinson, Rivenus and Company, 253
*Hygrade No. 12,* tank barge, 256

*I. U. Masters,* tug (*1874*), 193
*Icefield,* 3-masted schooner, 246
*Ice Hunters: A History of Newfoundland Sealing to 1914, The,* by Shannon Ryan, reviewed, 173
*In Bitter Tempest: The Biography of Admiral Frank Jack Fletcher,* by Stephen D. Regan, reviewed, 301
Inman, Byron Bonaparte, photo of, 192
Inman, Jerome and Cordelia, 193
Inman Line tugs in Duluth Ship Canal, photo, 206
*Interstate No. 4* (1933), 260
*Interstate No. 10,* barge (1937), 261
"Introduction of the Revolving Turret, The," by Arnold A. Putnam, 117–128
Ira S. Bushey & Sons, Inc., 262
*Irish Plane,* SS Irish vessel, 53
*Iron Fleet: The Great Lakes in World War II,* by George J. Joachim, reviewed, 306
*Italia,* airship (*1928*) 232

*J. L. Williams,* wooden tugboat (*1885*), 191
J. & R. Weir Collection, 270
*J. W. Fee,* tug (1893), 205
Jack Campbell Photo Collection, 274
Jackman, S. W., review by, 78
*James Cook and the Conquest of Scurvy,* by Francis E. Cuppage, reviewed, 80
*James Watt,* freighter (1901), 211
Jefferson, US President Thomas, 145
Joachim, George J., *Iron Fleet: The Great Lakes in World War II,* reviewed, 306
*John A. Macdonald,* icebreaker, 271
*John A. Paige,* tug (1885), 196
*John F. Drews,* ship (1894), 270
John H. Mathis Company, 251
*John Martin,* tow barge (*1889*), 198
Johnston, William Joseph, 190
Jones, Dilwyn, *Boats,* reviewed, 307
*Journal of Jean-François de Galaup de la Pérouse, 1785–1877, The,* Edited and Translated by John Dunmore, reviewed, 400
Judd, Richard W., Edwin A. Churchill and Joel W. Eastman, Editors, *Maine: The Pine Tree State from Prehistory to the Present,* reviewed, 81
Jugnauth, Sir Aneerood (Prime Minister of Mauritius), 158
*Juniper,* lighthouse tender, 266

Kasenally, Swalay, Minister of Foreign Affairs of Mauritius, 159
*Kasota,* steamer (*1884*), 195
*Kearsarge,* USS warship (*1812*), sketch of, 118
Keel, rabbet & garboard strakes, sketch of, 100
*Keepsake,* wooden ship (*1880*), 362
Kelsey, Harry, review by, 400
Kelshall, Gaylord T. M., *The U-Boat War in the Caribbean,* reviewed, 304
Kemp, Professor John, 32
Kennedy, Greg, reviews by, 77, 294
Kennerley, Alston, "Frank Thomas Bullen, 1857–1915: Whaling and Nonfiction Maritime Writing," 353–370
Kennon, Lieutenant Beverley, CSN, 225
*Kent,* British ship (*1800*), 151
Kerr, John Stuart, 10
Kessler, Kapitänleutnant Horst, 54
Khashabah, Yemeni boat type, 89; photo, 91
Kingston Shipyard, 270, 273
Kirby, Frank (marine architect), 208
*Kittie M. Forbes,* steamer (*1885*), 196
Klare, Norman E., *The Final Voyage of the* Central America, *1857,* reviewed, 290
Knox-Johnston, Robin, *Cape Horn: A Maritime History,* reviewed, 170
Koburger, Charles W., Jr., *Franco-American Naval Relations, 1940–1945,* reviewed, 179; *Naval Warfare in the Baltic, 1939–1945: War in a Narrow Sea,* reviewed, 299
Kommos site (Minoan seaport on Crete), contemp. photo of site, 324, 325, 329. *See also* photos of Mycenaean ship shed, 327,

328.
Kristensen, Captain Leonard, 379

Lacle, Mathieu, Minister of Marine Resources of Mauritius, 159
"Lancing a Whale," illustration of, 358
Langley, Harold D., *A History of Medicine in the Early U.S. Navy,* reviewed, 404
Lansdowne, Lt. Commander Zachary, 228
Latrobe, Benjamin Henry, 36
LaVo, Carl, *Back from the Deep: The Strange Story of the Sister Subs* Squalus *and* Sculpin, by Fraser M. McKee, reviewed, 180
Lawrence, Captain James, 216
Lawrence, Richard W., review by, 282
Lee, Colonel Isaac, 30
Leiner, Frederick C., reviews by, 286, 404; "The Seizure of the *Flying Fish,*" 131–139
*Levant,* sealing vessel (1853), 371
*Liberdade,* small boat (*1890*), 156
Lipfert, Nathan R., review by, 401
Little, Captain George, 131
Littler, Lieutenant John C., RCNR, 52
*Little v. Barreme,* US Supreme Court case, 138
Livingston, Edward, 38
Livingston, John (engineer), 36
*Lodona,* six-gun vessel (1863), 220
*Los Angeles,* ZR-3 dirigible, 230; photo of ffcers boarding, 232
Lothrop Award Winner announcement, 1995: Paul E. Fontenoy, *An "Experimental" Voyage to China 1785–1787,* 6
Love, Robert W., Jr., review by, 413
Lovelady photo collection, 273
Lowell, US District Judge, 134
Lowenthal, Larry, review by, 72
Loxton, Bruce with Chris Coulterhard-Clark, *The Shame of Savo: Anatomy of a Naval Disaster,* reviewed, 67
Lyons, Sherrie L., review by, 171

*M. D. Carrigan,* tug, photo of, 200
Maas, Alfred, "Daniel French and the Western Steamboat Engine," 29–41
Macarty, William, 145
MacDonald, William Alister, "The Schooner *Pilgrim* in Papeete Harbor, Tahiti", watercolor, 1933 (PEM Collection), cover of *The American Neptune,* Spring 1996 (56:2)
MacNeil, Lieutenant Robert A. S., RCNR, 54
*Macon,* airship, 231
*Magellan,* barque (*1877*), 360
Maher, Brendan A., *A Passage to Sword Beach: Minesweeping in the Royal Navy,* reviewed, 308
Mahmud Mu'allim (boatbuilder of Tihamah, Yemen), 104
*Maine: The Pine Tree State from Prehistory to the Present,* Edited by Richard W. Judd, Edwin A. Churchill and Joel W. Eastman, reviewed, 81
Mainguy, Captain E. R., RCN, 58
Makham, Ambassador Vijay, Secretary of Foreign Affairs of Mauritius, 159
Malartic, Governor of Mauritius, 151
Maloney, Raymond James, "Where Did the Mutiny on the *Bounty* Occur?" 383–387
*Man and the Maritime Environment,* by Stephen Fischer, reviewed, 81
Mancall, Peter C., review by, 395
*Mapleheath,* diesel (1911), 270
Map of Batavia Roadstead (Java) pub. 1794, 10
Map of Eastern Mediterranean Sea in the Bronze Age, 317
Map of Gulf of Mexico: 'Mapa de las Islas de la América y de otras paisas de Tiera Firme,' n.d., 22
Map of Minoan Crete, 316
Map of Province of Cartagena (Panama), 1787, 25
Map of Southwestern Indian Ocean, 146
Map of Yemen, 90
*Maritime History, Volume I: The Age of Discovery,* by John B. Hattendorf, 307
"Maritime Character of Minoan Civilization, The," by Clark G. Reynolds, 315–351
Mark Twain (author); see Clemens, Samuel L.
*Mars,* HMS (1899), 366
Marshall, US Chief Justice John, 137
Martin, Jay C., review by, 306
*Matanzas,* barge (*1900*), 210
*Mathewston,* upper laker (1922), 270
Mathis Shipyard, photo of, 247
Maxfield, Commander Lewis H., USN, 228

*Mayflower,* schooner, 193
Maytham Tug Line, Buffalo, 195
McDougall, Captain Alexander, 195
McKay, Ian, *The Quest of the Folk: Antimodernism and Cultural Selection in Twentieth-Century Nova Scotia,* reviewed, 175
McKee, Fraser M., review by, 180
McLachlan photo collection, 273
McVittie, Alexander, 208
*Medina,* tug (*1893*), 206
Mellen, Captain Lovett, 10; letter by, 12
Mellen, Consul W. R. G., 147
Melville, Herman, *White Jacket,* 215
*Merchants of Maritime India, 1500–1800,* by Ashin Da Gupta, reviewed, 169
Mergensen, Kapitänleutnant Ernst, 53
Mesara, photo of Beach and Bay of, 329
Mets, David R., review by, 302
*Mianatonomoh,* ironclad monitor (*1866*), 122
Mid-Ocean Escort Force (MOEF) in 1942, 45–59
Miller, Al, "A Tugman's Story: Life and Times of B. B. Inman," 191–212
Miller, William H., Jr., *Pictorial Encyclopedia of Ocean Liners, 1860–1994,* reviewed, 82
Minchinton, Walter, review by, 397
*Minnehaha,* barge (*1883*), 195
Minoan civilization: chronology from 3100 BC to 1190 BC (from Stuart W. Manning), 343; discussion of chronology and history, 315 ff.; "Marine Style" pottery (16th Cent. BC), photo of, 340; navigation and trade routes, 335–339, 343; navigational compass and mold, photos of, 336, 337; religion, 339–343; ship, earliest known depiction c. BC 2000, 330; ships, frescoes showing, 330–334; photo, 332; suggested readings, 343–344
Minoan (or Mycenaean) copper ingot, photo of, 335
Minos (King of Crete), 315; photo of so-called Ring of, 338
*Mirnyy,* Russian ship (*1820*), 373
Mispelkamp, Peter K. H., review by, 76
*Mississippi,* USS warship, photo of, 152
*Missouri,* USS battleship (*1992*), 117
Mitchell, Professor Samuel L., 33, 137
Moffett, Rear Admiral William A., USN, photo of, 227
*Monadnock,* ironclad monitor (*1866*), 122
*Monarch,* Canadian steamer (*1898*), 209
*Monet on the Normandy Coast: Tourism and Painting, 1867–1886,* by Robert L. Herbert, reviewed, 397
*Monitor,* USS ironclad ram (*1862*), 119, 120
*Monitor Montauk,* US turret, drawing of, 121
*Monsters of the Sea,* by Richard Ellis, reviewed, 171
Montreal Transportation Company, The, 272
Morey, Elizabeth, 7–15
Morey, Samuel, 29
Morgan, J. P., 149
Morris, James M., review by, 79
Morrison, James (Boatswain's mate), 385
Mueller, Edward A., *Upper Mississippi River Rafting Steamboats,* reviewed, 82
Muir, Malcolm, Jr., review by, 184
Mullins, Wayman C., Editor, *1942: "Issues in Doubt," A Symposium of the War in the Pacific,* reviewed, 183
Murfett, Malcolm R., Editor, *The First Sea Lords: From Fisher to Mountbatten,* reviewed, 407
Murray, Captain Alexander, 137
Murray, Spencer (author), 383
"Museum Focus: Marine Museum of the Great Lakes at Kingston," by Barry Gough, 269–275
Mutiny at sea, illustration of, 242
Mycenaean ship shed, photo of remains of, 327; photo of section of rear wall, 328

*Napanee,* corvette (1940), 274
*Narcissus,* buoy tender (1939), 251
*Narrative of the Expedition of an American Squadron to the China Seas and Japan,* by Commodore Matthew C. Perry, 152
*Nautilus,* brig (*1853*), 153
"Naval Engagement USS *Wasp* and HMS *Frolic,*" by Thomas Birch, cover of *The American Neptune,* Summer 1996 (56:3)
Naval Service Headquarters (NSHQ) (Ottawa, Canada), 50
*Naval Warfare in the Baltic, 1939–1945: War in a Narrow Sea,* by C. W. Koburge, Jr., reviewed, 299

Navigational information, photo, 337
Navigation plot to establish *Bounty's* position, chart of, 384
Neilson, Keith, review by, 408
Neilson, Keith and Elizabeth Jan Errington, Editors, *Navies and Global Defense: Theories and Strategy,* reviewed, 308
*Nelson Companion, The,* edited by Colin White, reviewed, 186
*New Orleans,* steam packet (1815), 37
News: 65, 167, 276, 389
*Niagara,* USN warship (*1812*), 225
Nicholls, Bob, review by, 181; *Statesmen and Sailors: Australian Maritime Defence, 1870–1920,* reviewed, 294.
*1942: "Issues in Doubt," A Symposium of the War in the Pacific,* Edited by Wayman C. Mullins, reviewed, 183
Nobile, General Umberto, 232
Noble, Sir Percy, Commander in Chief Western Approaches, 57
*Nomis,* 3-masted schooner (*1933*), 245
*Noronic,* ship (*1949*), 270
Norris photo collection, 273
*North Carolina's Hurricane History,* by Jay Barnes, reviewed, 284
*North River Steamboat* (*Clermont*) (*1840*), 163
*Northwest Passage: The Great Columbia River,* by William Dietrich, reviewed, 287

*Ocean Wave,* schooner, 193
*Oceola,* steamer (*1886*), 197
Ohio Steam Boat Company, 34
*Oil Transfer No. 20,* barge, 260
O'Leary, Wayne M., *The Tancook Schooners: An Island and Its Boats,* reviewed, 71
Oliver, Kenneth G., *Under the Southern Cross: A Petty Offcer's Chronicle of the U.S.S.* Octans, reviewed, 81
*Oliver Cutts, The,* ship, 239
*Omaha,* screw-sloop (1864), 219
*One Hundred Years of Power: The U.S. Navy, 1890–1990,* by George W. Baer, reviewed, 178
ON 113, Westbound convoy (1942), 45–59
Ormsbee, Elijah, 30
*Ossifrage,* steamer (*1888*), 198
*Ossipee,* US steamer (*1863*), 220

*Pacific Pioneer,* steamship, 56
*Paipoonge,* vessel (1888), 270
*Parameters of British Power, 1650–1850,* edited by Michael Duffy, reviewed, 290
*Passage to Sword Beach: Minesweeping in the Royal Navy, A,* by Brendan A. Maher, reviewed, 308
*Passaic,* ironclad ram (*1854*), 120
*Pathfinder,* tug (*1893*), 205
*Peace and Disarmament: Naval Rivalry and Arms Control, 1922–1933,* by Richard W. Fanning, reviewed, 297
*Pearl B. Campbell,* tug (*1895*), 207
*Pegasus,* British merchantman (1802), 11
Pendleton, Captain Issac, 15
*Penobscot,* steamer (*1899*), 210
*Pequod,* ship, 357
Perry, Captain Christopher Raymond, 131; photo of, 134
Perry, Commodore Matthew C., 151
Petrie, Donald A., note by, 63
*Peytona,* ship (*1853*), 147
*Pharos,* Boston ship (*1873*), 355
*Pictorial Encyclopedia of Ocean Liners, 1860-1994,* by William H. Miller, Jr., reviewed, 82
Pike, Nicholas, Consul 1867–1872, 148; photo of, 150
*Pilgrim,* schooner, 314; painting by William Alister MacDonald, cover of *The American Neptune,* Spring 1996 (56:2)
Pintado, Manuel Lopez, Commander, 20
Pitot, C. E. Thomy (Mayor of Port Louis), 156
Pittsburgh Steamship Company, 211
Plot of daily positions, illustrations of, 372
Pohuski, Michael (photographer), 163
*Poling Bros. No. 10,* tank barge, photo of, 255
*Poling Bros. No. 14,* tanker, 258
*Poling Bros. No. 17,* photo of, 261
Polson Ironworks of Toronto, 270
*Polyanthus,* HMS corvette, 49
Port Arthur Shipbuilding, 272, 273
Port Arthur Shipyard, 270
*Port au Prince,* English privateer (*1806*), 15
*Portland,* American ship (*1802*), 7–16
Port Louis, Mauritius, Harbor of (photo), 149
Prados, Edward, "Traditional Fishing Craft of the Tihamah and Southwestern Arabian Coast," 89–115

Pratt, Admiral William V., USN, 233
Preble, Ebenezer (part-owner of *Portland*), 9
Prentice, Rina, *A Celebration of the Sea: The Decorative Arts Collections of the National Maritime Museum,* reviewed, 281
Prentis, Thomas T. (American Consul in Mauritius in 1881), 159
*Primrose,* HMS, 49
*Prince Albert,* coastal defense ship (1866), 124, 126
Pritchard, James, *Anatomy of a Naval Disaster: The 1746 French Naval Expedition to North America,* reviewed, 398
Pump house Steam Museum, 269
Putnam, Arnold A., notes by, 128–129; "The Introduction of the Revolving Turret," 117–128

*Quest for Glory: A Biography of Rear Admiral John A. Dahlgren, A,* by Robert J. Schneller, Jr., reviewed, 404
*Quest of the Folk: Antimodernism and Cultural Selection in Twentieth-Century Nova Scotia, The,* by Ian McKay, reviewed, 173
Quigley Shipyard, 266
*Quinte,* HMCS minesweeper, 56

*Radiant,* steam tug (*1938*), 253
Ramgoolam, Sir Seewoosagur (of Mauritius), 158
*Rangitki,* ship (*1875*), 362
Rattles, Battle: see "The United States Navy Boarding Rattle: A Unique Item of Nineteenth Century US Naval Ordnance," by William J. Urick, III, 215–226; photos, pp. 216, 217, 218, 220, 221, 223, 224; drawing, p. 222
Ravenhill, Captain R. W., RN, Deputy Chief of Staff, 57
Ray, James, 34
Readers' Forum: 63, 279, 391
*Rebecca* (also known as *Aunt Becky* and *Wheelbarrow*), steam ferry (*1812*), 34
*Record,* tug (*1888*), 198
"Recovery of the Crosshead Engine of the Steamboat *Columbus,*" by David C. Holly, 163–166
*Redwater,* ship, 270
*Red Wing,* schooner (*1885*), 196
Reed, Everett (Naval Architect), 128
Reeder, Charles (engine builder), 165
Regan, Stephen D., *In Bitter Tempest: The Biography of Admiral Frank Jack Fletcher,* reviewed, 301
*Reindeer,* ship (*1849*), 241
"Return of the Wolf Packs: The Battle for ON 113, 23–31 July 1942," by Robert C. Fisher, 45–59
*Reuben James,* USS destroyer, 47
*Revolt of the Admirals: The Fight for Naval Aviation, 1945–1950,* by Jeffrey G. Barlow, reviewed, 302
Reynolds, Clark G., review by, 305; mentioned, 314; "The Maritime Character of Minoan Civilization," 315–351
Rich, Captain Abraham, 147
"Riddle of the *Portland:* Lost in the South Pacific—1802, The," by Shirley Hughes, 7–17
*Roanoke,* steam frigate (*1865*), 122
*Robert Fulton,* steamer (*1898*), 209
Robert Johnson Collection, The, 271
Robertson, Edward (ship master), 209
Robinson, Charles M., III, *Shark of the Confederacy: The Story of the C.S.S.* Alabama, reviewed, 73
Robinson, Leroy, photo of at launching, 248
Rodger, Commander John, 230
Rogers, Robert F., *Destiny's Landfall: A History of Guam,* reviewed, 283
Roithberg, Oberleutnant Hardo Rodler von, 48
*Rolf Krake,* Danish warship (1863), 124
*Rose,* HMS, 386
*Rosedale,* steamer (*1893*), photo of, 203
Rosenthal, Lt. Commander Charles E., 231
Rosselt, Mr. and Mrs. H., 11
Rowland, Commander James M., RN, 55
*Royal Australian Navy in World War II, The,* Edited by David Stevens, reviewed, 415
Royal Mail Steam Packet Company, 366
*Royal Sovereign,* British ship (1864), 124
Ruff, Eric J., review by, 71
Rumsey, James, 29
Rust, Eric C., review by, 298–299
Ryan, Luke, note about, 64
Ryan, Shannon, *The Ice Hunters: A History of*

*Newfoundland Sealing to 1914,* reviewed, 173

*S. T. Kiddoo,* coastal tanker (1938), 262
*Sailing Alone Around the World,* by Joshua Slocum, 156
Salas, Antonio de (Governor of Cartagena), 20
Salecker, Gene Eric, *Disaster on the Mississippi: The* Sultana *Explosion, April 27, 1865,* reviewed, 414
Samuels, Harold and Peggy, *Remembering the* Maine, reviewed, 293
Samuels, Peggy and Harold, *Remembering the* Maine, reviewed, 293
*Sanbuq,* Yemeni sewn boat, 89; lines from, sketched, 109; photo of, 99; photo of transom of, 107
Sandler, Stanley, review by, 293
*Sand Merchant,* dredger, 273
Sands, John O., review by, 70
*Sara Sands,* ship, 239
*Satellite,* tug (*1874*), 193
*Scapegoats: A Defense of Kimmel and Short at Pearl Harbor,* by Edward L. Beach, reviewed, 411
Schneller, Robert J., Jr., *A Quest for Glory: A Biography of Rear Admiral John A. Dahlgren,* reviewed, 404
Schultz, Charles R., review by, 291
Schultz, Elizabeth A., *Unpainted to the Last: Moby Dick and Twentieth Century American Art,* reviewed, 288
Schwantke, Oberleutnant Hans-Joachim, 53
*Scorpion,* Confederate ram (*1862*), 126
Seals, photo of ivory, 331
"Seizure of the *Flying Fish,* The," by Frederick C. Leiner, 131–139
*Senga,* SS, merchant ship, 50
Sexton, Mark, cover photo by, 56:3
Shaler, William, 151
*Shame of Savo: Anatomy of a Naval Disaster, The,* by Bruce Loxton with Chris Coulterhard-Clark, reviewed, 67
*Shannon,* HMS frigate (*1813*), 216
*Shark of the Confederacy: The Story of the CSS* Alabama, by Charles M. Robinson, III, reviewed, 73
Sharp, George G., 256
*Shenandoah,* ZR-1 airship, 228
Sheridan Transportation Company, 253
Shingleton, Royce, review by, 405
*Shipbuilders of Essex: A Cronicle of Yankee Endeavor, The,* by Dana A. Story, reviewed, 401
*Ship of Courage, the Story of HMAS* Perth *and her Crew,* by Brendan Whiting, reviewed, 181
*Ships and Seamanship in the Ancient World,* by Lionel Casson, reviewed, 185
Ship's Complement, graph of, 219
Shipyard crew, photo of, 250
Shomette, Donald G., *Tidewater Time Capsule: History Beneath the Pautuxent,* reviewed, 282
Shreve, Captain Henry M., 38
*Silas Talbot: Captain of Old Ironsides,* by William M. Fowler, Jr., reviewed, 286
*Silent Running: My Years on a World War II Attack Submarine,* by James F. Calvert, reviewed, 408
Silsbee, Captain Nathaniel (master of *Portland* in 1797), 9, 151
Simpson, Michael, review by, 297
Singer, Captain Walter, 205
Slocum, Joshua, photo, 155; *Sailing Alone Around the World,* 156; *Voyage of the* Liberdade, 156
Smith, Felix, 235
Smith, William, 371
Snider photo collection, 274
Solander Whaling Ground, photo of, 254
Solomon, Deacon Sage, 29
*Solsten,* SS tanker, 52
Soudinger, Charles (engineer), 36
*Splendid,* whaler (1876), 354, 355
*Spray,* ship of Joshua Slocum, photo of, 155
*St. Croix,* HMS town-class destroyer (ex-USS *McCook*), photo of, 48
*St. John's Guild,* hospital barge (*1935*?), photo of, 257
*Stancleeve,* merchant steamship, 51
Starr, Donald, 314
Starr, Donald and Polly, mentioned, cover illustration for 56:2
Starr, Jehosaphat, 30
*Statesmen and Sailors: Australian Maritime Defence, 1870–1920,* by Bob Nicholls,

reviewed, 294
Steel, Thomas, 243
Stern paddle wheel, drawing by Nicholas King, 35
Stevens, David, Editor, *The Royal Australian Navy in World War II,* reviewed, 415
Stevens, John, 117
Stilgoe, John R., review by, 397
Stilwell, Paul, *Battleship* Missouri: *An Illustrated History,* reviewed, 414
Stimson, Francher, 239
Stitching at stempost, photo of, 104
Stoddert, Benjamin, Secretary of the Navy, 132
Stookey, Robert, 89
Storm at sea, photo of, 236
Story, Dana A., *The Shipbuilders of Essex: A Chronicle of Yankee Endeavor,* reviewed, 401
Strahan, Jerry E., *Andrew Jackson Higgins and the Boats that Won the War,* reviewed, 78
*Stranger,* tug (*1874*), 193
*Strike Able-Peter: The Stranding and Salvage of the USS* Missouri, by John A. Butler, reviewed, 414
*Submarine Admiral: From Battlewagons to Ballistic Missiles,* by Admiral I. J. Galantin (USN-Ret.), reviewed, 305
*Sunken Treaties: Naval Arms Control Between the Wars,* by Emily O. Goldman, reviewed, 77
*Sweepstakes,* tug (*1873*), 193
Symington, William, 40
Syrett, David, review by, 304

*Tancook Schooners: An Island and Its Boats, The,* by Wayne M. O'Leary, reviewed, 71
*Tarantau,* self-unloader, 273
Taylor, George R., 266
Taylor, M. Brook, review by, 175
Taylor, Thomas, Commander RN, 49
*Terror,* HMS (*1843*), 373
Teukava of Kilovai, Hihifo war chief, 7–16
*Texaco 325,* tank barge, 249
*Texaco 326,* tank barge, 249
*The Oliver Cutts,* see *Oliver Cutts, The*
*Thomas Pope,* bark (*1862*), 148
Thompson, Keith Stewart, *HMS* "Beagle": *The Story of Darwin's Ship,* reviewed, 186
*Thompson,* tug (*1893*), 205
Thomson, J. Stuart, review by, 179.
Thornton, William, 36
*Three Friends,* ship (*1794*), 9
*Three Years' Wanderings of a Connecticut Yankee....* by C. M. Welles, 153
*Tidecraft: The Boats of South Carolina and Northeastern Florida, 1550–1950,* by William C. Fleetwood, Jr., reviewed, 185
*Tidewater Time Capsule: History Beneath the Pautuxent,* by Donald G. Shomette, reviewed, 282
Tienda de Cuervo, Bartolomé, Cartagena leader, 9–27
Tihamah, Southwestern Arabian Coast, 89
Timby, Theodore R., 117
Tod, Giles M. S. (1914–1995), Memoriam Note to, 63
Tomlinson, George A., 207
Tomlinson, James, 38
Tongan vessels, photo of drawing of, 8
Topp, Korvettenkapitän Erich, 47
*Torpedoes in the Gulf: Galveston and the U-Boats, 1942–1943,* by Melanie Wiggins, reviewed, 79
Trade Routes and Navigation, 335
"Traditional Fishing Craft of the Tihamah and Southwestern Arabian Coast," by Edward Prados, 89–115
Treenails, oblique, sketch of, 101
*Trial: Ordeal of the USS* Enterprise *14 January 1969,* by Michael Joe Carlin, reviewed, 184
*Trillium,* steam ferry, 270
Trois Mamelles, volcanic remnants on Mauritius, photo of, 148
*Trusty,* British test vessel (*1862*), 124
Tucker, Spencer C., review by, 405
"Tugman's Story: Life and Times of B. B. Inman, A," by Al Miller, 191–212
Tugs towing schooner barges, photo, 197
*Tula,* British ship (*1830*), 373
Turret design by Coles, 123, 124
*Tuscarora,* barge, 260

*U.S. Merchant Vessel War Casualties of World War II,* by Robert M. Browning, Jr., reviewed, 308
US Navy Battle Rattle. *See* Rattles, Battle.

US Navy Convoy and Routing Section (CONNAV) in Washington, 49
US Navy Gas Alarm rattle, ca. 1918, photo of, 223
*US v. The Spanish Smack Paquete Habana* (Case in US Supreme Court) 139
U-boat, German, photo of, 47
*U-Boat War in the Caribbean, The,* by Gaylord T. M. Kelshall, reviewed, 304
Uhlig, Frank, Jr., review by, 301
*Under the Southern Cross: A Petty Offcer's Chronicle of the USS* Octans, by Kenneth G. Oliver, reviewed, 81
Union, New York ship, (*1804*), 7
*United States,* US frigate (1843), 215
"United States and Mauritius 1794–1994: A Bicentennial Retrospective, The," by Larry W. Bowman, 145–159
"United States Navy Boarding Rattle: A Unique Item of Nineteenth Century US Naval Ordnance, The," by William J. Urick, III, 215–226
*Unpainted to the Last: Moby Dick and Twentieth Century American Art,* by Elizabeth A. Schultz, 288
Upended cabin of a ship in water, photo, 334
*Upper Mississippi River Rafting Steamboats,* by Edward A. Mueller, reviewed, 82
Urick, William J., III, notes by, 226; "The United States Navy Boarding Rattle: A Unique Item of Nineteenth Century US Naval Ordnance," 215–226

Valle, James E., review by, 170
Venables, Captain Hugh Ferrar, 11
*Vesuvius,* steamboat (1814), 36
View of exterior plank stitching, photo of, 103
*Vincennes,* ship (*1838*), 373
Vogelsang, Kapitänleutnant Ernst, 56
*Vostok,* Russian ship (*1820*), 373
*Voyage of the* Liberdade, by Joshua Slocum, 156

*W. B. Castle,* salvage vessel (*1898*), 209
*Walker,* HMCS destroyer, 55
*Warrior,* steam-powered ironclad (*1861*), 122
*Washington,* two-decker steamboat (1815), 39
*Wasp,* USS sloop (*1812*), painting by Thomas Birch, cover of 56:3
Watson, Alan D., review by, 284
Watt, James, 29
Webber, John, "Tongan canoes," painting c. 1791 (PEM collection), cover of *The American Neptune,* winter 1996 (56:1)
Webster, Daniel, 148
Weddle, Robert S., *Changing Tides: Twilight and Dawn in the Spanish Sea, 1763–1803,* reviewed, 395
Welcome, Captain Frank, 193
Welles, C. M., *Three Years' Wanderings of a Connecticut Yankee,* 153
Welles, Thomas (Governor of Connecticut), 153
Wentworth, Brigadier General Thomas, 26
*Wheelbarrow,* see *Rebecca*
"Where Did the Mutiny on the *Bounty* Occur?" by Raymond James Maloney, 383–387
White, Colin, Editor, *The Nelson Companion,* reviewed, 186
White, George, 39
Whiting, Brendan, *Ship of Courage: The Story of* HMAS Perth *and her Crew,* reviewed, 181
Wiggins, Melanie, *Torpedoes in the Gulf: Galveston and the U-Boats, 1942–1943,* reviewed, 79
Wilder, Patrick A., *The Battle of Sackett's Harbor,* reviewed, 172
"William A. Moffett and His 'Disastrous Dirigibles,'" by Paolo E. Coletta, 227–234
William H. Johnston Papers, The, 272
*Williams,* sealing vessel (*1819*), 371
Wilson, Captain Thomas, 195
Wilson, H. W., *Battleships in Action,* reviewed, 76
*Winifred,* tank barge, 256
Winn, Commander Rodger, RNVR, 47
*Wivern,* HMS, photo of, 125
*Wolf* group, German U-boats. *See* Group *Wolf*
Wolvin, Augustus B., 207
Wood, Virginia Steele and Mary R. Bullard, Editors, *Journal of a Visit to the Georgia Islands of St. Catherines, Green, Ossaban, Sapelo, St. Simons, Jekyll, and Cumberland, with Comments on the Florida Islands of Amelia, Talbot, and St.*

*George, in 1753,* reviewed, 415
Workers of the Seamen's Mission, photo of, 364
Wrightson, Captain Walter, 246

*Yankee Sailors in British Gaols: Prisoners of War at Forton and Mill, 1773–1783,* by Sheldon S. Cohen, reviewed, 402
Yarnell, Peter, 40
Yates, Keith, *Graf Spee's Raiders: Challenge to the Royal Navy, 1914–1915,* reviewed, 406
Yemen, Southernwestern Arabia, 89

Zane, Noah, 39
*Zélée,* ship (*1840*), 373
*Zinnia,* buoy tender (1939), 250
*Zouave,* tug (*1873*), 193
ZR-3 airship, German, 228

# Compound Ship Names:

[#: see under No.]

*Adams, Eliza*
*Albert, Prince*
*Anderson, Bob*
*B., Cora*
*Brockway, George E.*
*Campbell, Pearl B.*
*Carrington, E. M.*
*Carrington, M. D.*
*Castle, W. B.*
*Chisholm, Henry*
*Cleveland, City of*
*Collier, Captain*
*Cutts, The Oliver*
*Danforth, F. L.*
*Drews, John F.*
*Dumont, A. H.*
*Falconer, Annie*
*Fee, J. W.*
*Fish, Flying*
*Forbes, Kittie M.*
*Friends, Three*
*Fulton, Robert*
*Grace, Annie C.*
*Greene, General*
*Guild, St. John's*
*Hale, E. B.*
*Henry, Alexander*
*Hoyt, Colgate*
*Inman, B. B.*
*Kiddoo, S. T.*
*Krake, Rolf*
*Lincoln, Abe*
*Macdonald, John A.*
*Maria, Delia*
*Martin, John*
*Masters, I. U.*
*McDougall, Alexander*
*Merchant, Sand*
*Moore, Hannah*
*No. 4, Interstate*
*No. 6, Cities Service*
*No. 10, Interstate*
*No. 10, Poling Bros.*
*No. 12, Hygrade*
*No. 14, Poling Bros.*
*No. 17, Poling Bros.*
*No. 20, Oil Transfer*
*No. 101, Barge*
*No. 102, Barge*
*No. 107, Barge*
*No. 115, Barge*
*No. 325, Texaco*
*No. 326, Texaco*
*Oak, Grey*
*Orr, Arthur*
*Paige, John A.*
*Pfister, Guido*
*Pope, Thomas*
*Rome, City of*
*Sands, Sara*
*Sovereign, Royal*
*Stanwood, F. H.*
*States, United*
*Steamboat, North River*
*Stone, Ella G.*
*Sutton, David*
*Tidings, Glad*
*Turk, Grand*
*Verdon, F. A.*
*Watt, James*
*Wave, Ocean*
*Williams, Eliza*
*Williams, George F.*
*Williams, J. L.*
*Wing, Red*

Phillips Library
3 6234 10001571 1

CLIPPER SHIP "NIGHTINGALE" - GETTING UNDER WEIGH OFF THE BATTERY, NEW YORK
Large Folio Lithograph Published by N. Currier, 1854


# AMERICAN MARINE PRINTS AND PAINTINGS

## *BOUGHT and SOLD*

We have an extensive collection of American marine prints.
Your interests and wants are eagerly sought.

**Ninety-seven years experience buying and selling American prints and paintings.**

## *The* OLD PRINT SHOP

*Kenneth M. Newman*

**150 Lexington Ave.** *at* **30***th* **St.,** *New York, N.Y. 10016*

*Established 1898* ★ ★ ★ ★ ★ ★ *Tel: (212) 683-3950*

# QUESTER GALLERY

## The Gallery of Exceptional Marine Art & Antiques

### GALLERY SERVICES AVAILABLE:

**Paintings and Prints:**
- Commissions
- Conservation
- Framing
- Restoration

**Yacht and Ship Models:**
- Commissions
- Conservation
- Custom Model Cases
- Restoration

**Consulting:**
- Buying
- Selling
- Collection Planning

**FULL COLOR CATALOG $12.00**

*Beginning as collectors ourselves, our area of expertise and interest is 19th and early 20th Century marine art. We seek to purchase the finest quality marine art and antiques available. Working with collectors in the United States, Canada, and Europe, we are able to locate, purchase, trade and/or sell important works of art before they reach the wider market of public auction or generalist galleries. We represent several of the finest contemporary marine artists, enabling us to offer the best in yacht and residential painting commissions.*

On The Green/P.O. Box 446W Stonington, Conn. 06378

Fax: (860) 535-3533 Tel: (860) 535-3860 Mon.-Sat.